

THE MINING AND METALLURGICAL JOURNAL.

FORMERLY THE PACIFIC COAST BULLION.

VOL. XV., No. 1

LOS ANGELES, CAL., APRIL 1, 1896

PRICE, 10 CENTS

The Roessler & Hasslacher
CHEMICAL CO.

73 PINE STREET, NEW YORK.

CYANIDE
OF
POTASSIUM,



Ferricyanide of Potassium,
Peroxide of Sodium,
Hyposalphite of Soda,
Sulphide of Iron, and
Other Chemicals



TO MINE-OWNERS and others having Refractory Gold and Silver ores hitherto untreatable at a profit, the MacArthur Forrest (Patent) Process of gold and silver extraction offers a solution of the difficulty.

Advisory Board in the United States: THOMAS W. GOAN, Mgr., HUGH BUTLER, Atty., JOHN F. DELL, F. GEORGE GOW, Deaver, Col., California and Nevada Agency, and Demonstration Plant, 45 Stevenson Street, San Francisco, Cal., F. G. Gow, Sole Agent.

Office: McPhee Building, Denver, Col.

American Girard Water Wheel



Adaptable to all heads between 30 feet and 2000 feet, particularly where economy in the use of water and fine regulation are desired, as, for instance, the operation of electric dynamos.

Over 7,000 GIRARD
Wheels in Daily Use.

GIRARD WATER WHEEL CO.

34 Main Street.

San Francisco, Cal., U. S. A.

ADAMANTINE SHOES & DIES
AND



CHROME CAST STEEL
Cams, Tappets, Bosses, Roll
Shells and Crusher Plates.

These castings are extensively used in all the Mining States and Territories of North and South America. Guaranteed to prove better and cheaper than any others. Orders solicited subject to above conditions. When ordering send sketch with exact dimensions. Send for Illustrated Circular.

CHROME STEEL WORKS,
Kent Ave. & Keap St., BROOKLYN, N. Y.



Stamp Cam

CHICAGO AND AURORA SMELTING AND REFINING CO.

Buys all Classes of —

SILVER, LEAD, GOLD AND COPPER ORES

A specialty made of handling

HIGH GRADE ORES, MATTES and BULLION

Chicago and Aurora, Ill.

Leadville, Col.

Consolidated Kansas City Smelting & Refining Co.

BUYERS OF ALL CLASSES OF

BULLION, MATTE, ORE & MILL PRODUCTS, GOLD & SILVER BARS

Smelting Works { Leadville, Colorado.
El Paso, Texas.
Argentine, Kansas.

REFINERIES: ARGENTINE, KANSAS.

Ore Purchasing Agencies

Spokane, Wash. Salt Lake, Utah.
Leadville, Colorado. Denver, Colorado.
El Paso, Texas. Argentine, Kansas.
Cripple Creek, Colorado.

THE P. 98-99
PER CENT CYANIDE POTASH

Peroxide Sodium, Zinc Shavings, Borax Glass,

ALSO A

Full Line of Assayers' CHEMICALS and APPARATUS
F. W. BRAUN & CO., - Los Angeles, Cal.

THE
RUSSELL PROCESS

*The Improved Method of Lixiviation
for Free and Rebellious Silver and
Gold Ores and Tailings, Either Raw
or After Roasting. Send for New
Publications Just Issued : : :*



The Russell Process Co. - Park City, Utah.

THE PELTON WATER WHEEL *

Affords the most simple, economical
and reliable power for all
purposes.

PELTON WATER WHEEL CO., Dept. B.
121 Main St., San Francisco, Cal.

They give more value for the money
than any other power appliance
known. Catalogues upon
application.

EAGY MANFG CO.
MANUFACTURERS OF

STEEL WATER PIPE AND GENERAL
IRRIGATION SUPPLIES SHEET IRON WORK
WORKS, Cor. New Main and Date Sts. OFFICE, 4 Baker Block

DEALERS IN CAST IRON PIPE. LOS ANGELES, CAL. Telephone No. 1396

THE EDWARD P. ALLIS COMPANY

MANUFACTURERS OF

Mining, Milling and Smelting Machinery

Crushers, Concentrators, Pumps, Compressors, Hoists, Boilers,
Reliance Crushing Rolls, Reynolds Corliss Engines, &c.

Send for Catalogue.

Milwaukee, Wis.

THE MACHINERY SUPPLY CO.
105 North Broadway, Los Angeles.
MINING AND ELECTRICAL MACHINERY
UP TO DATE. (See page 12.)

THE GRIFFIN MILL THE ZENITH GAS AND GASOLINE ENGINE *



The only Perfect Pulverizer Working both Wet or Dry Process

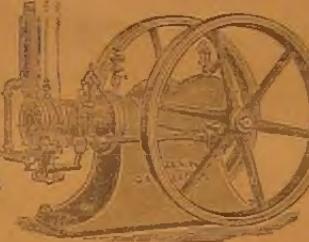
NO JOURNALS IN PULVERIZING CHAMBER.

Delivers a finished product. Will pulverize 1 to 2 tons per hour on Portland Cement, Quartz or ore depending on hardness of material and fineness of product.

Manufactured and Sold by —

Bradley Pulverizer Co.,

93 STATE STREET,
Boston, Mass.



WEIGHT 25 PER CENT
LESS THAN ANY OTHER ENGINE OF THE SAME HORSE POWER. : ENGINES FROM 2 HORSE POWER UP.

THE SIMPLEST
NOISELESS
ECONOMICAL
CLEANLY
SMOOTH RUNNING
EASY STARTING
ENGINE

Most Perfect Gas Engine Made

BY FAR THE

COMPLETEST IN CONSTRUCTION, positive movements of all its working parts. New principle of governing which makes it the most ECONOMICAL; Runs as SMOOTH AS A STEAM ENGINE; Starts without churning on the fly wheels; Crank and Piston are PROTECTED FROM DUST; Is adapted to all work where power is used. For full particulars address,

TEL. 933 WM. A. FRUHLING ARTISTIC WROUGHT IRON WORKS

216-218 S. LOS ANGELES STREET, LOS ANGELES, CAL.

F. W. SKINNER

PILLSBURY & SKINNER

Civil and Hydraulic Engineers

Special attention paid to Mining Work.
F. W. Skinner, Deputy U. S. Mineral Surveyor. Rooms 318-320 Stimson Blk, Los Angeles

G. E. PILLSBURY

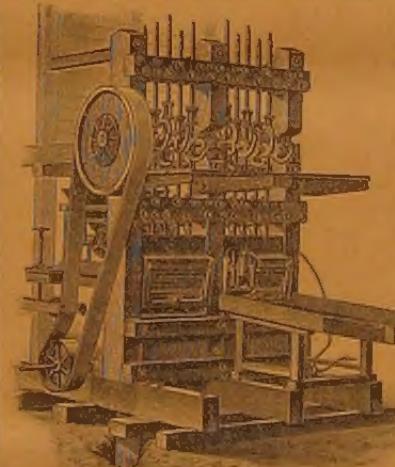
WM. H. HOEGEE

MANUFACTURER OF

Oiled Clothing, Awnings, Tents, Sails, Tarpaulins, Flags, Banners, and Camp Furniture. Tents and Canvas Floors for Rent.
Jobber of Cotton Duck, Etc.

136 S. Main Street,

LOS ANGELES, CAL.



A Self-Evident FACT.

In the treatment of many low grade ores, the margin of profit is sometimes so small that great care and judgement is required in the selection of properly designed machines and appliances as well as in the arrangement of the same. The manufacture of

MINING MACHINERY

of every description is our specialty. Our new shops were specially designed for this purpose.

Gates Rock and Ore Breakers
Have acquired a reputation for superiority world-wide in extent.

Crushing Rolls, Stamp Mills, Smelters, Concentrators, Pans, Settlers, Hoisting, Conveying and Pumping Machinery.

Complete Installations for all Methods of Treatment.

For Catalogues and further information, address

Gates Iron Works, 650 Elston Ave, Chicago, U.S.A.

New York
136 Liberty St

London, R. C.
73 A Queen Victoria St.

Butte, Mont.
Silver Bow Block

City of Mexico
Calle de Santa No. 5

VULCAN IRON WORKS

SAN FRANCISCO, CAL.

JEFFREY CHAINS
OF ALL KINDS FOR
ELEVATING &
CONVEYING
MACHINERY.

Embodying the very latest ideas in mechanical engineering.

JEFFREY Power Transmission
Machinery

WIRE CABLE CONVEYORS,

For long
and short
distances
moving.

Write for fully illustrated catalogues.

JEFFREY MFG. CO.
COLUMBUS, O.

163 Washington Street,
New York.

THE BRIGGS

Two stamp mill 350 lb. stamps. Weight of mill 6,000 lbs., most substantial mill ever offered to miners; discharges both ends and front, will crush from 6 to 10 tons per day, any one can set it up Complete as per cut, Price \$450.00. This mill is furnished with cast steel shoes and dies, and heavy iron guides.

Joshua Hendy
Machine Works

38-44 Fremont St.
San Francisco, Cal.

THEODOR LEXOW
106 Broadway, New York
Importers of
CARBONS
—FOR—
DIAMOND DRILLS and all Mechanical Purposes

Henry Demmert

JAMES H. LANCASTER,

Patented and Manufacturer of
COMBINATION BOILERS, EXCAVATORS, SQUARE SHOTGUN, GRATES, GRAPHITE, BIGBEDS, BILLET CUTTERS, ROCK AND ORE BARANDAS, GRANULATORS, COMBINED GRINDERS, SAWMILL AND ROLLER, SUSPENSION CARBLES AND SCREWS
Placer Gold Amalgamators, Mining Dredges, Riffles, Concentrators, Special Plants of all kinds, capacities and powers designed and built. Catalogues and Testimonials on application.

NEW YORK

A. J. McCONE, President

J. P. McALLISTER, W. LEWIS BELL, Managers

FULTON ENGINE WORKS

MINING, MILLING AND SMELTING MACHINERY

Best Equipped Foundry, Machine, Boiler, & Blacksmith Shops in Southern California. P. O. Box 296, Station C, Los Angeles, Cal.

**THE
Mining & Metallurgical
+ JOURNAL +**

REGISTERED AT THE POST OFFICE AT LOS ANGELES, CALIFORNIA,
AS SECOND CLASS MAIL MATTER.

VOL. XV. APRIL 1 NO. 1

P. W. EDELMAN, Editor.

LIONEL A. SHELDON,
ST JOHN DAY, F. R. S. Edin.,
Special Contributors

ULRICH KNOCH, Publisher.

OFFICE, Stimson Block, Los Angeles, Cal.

SUBSCRIPTION PRICE:

For United States, Mexico and Canada	\$2.50 per annum
	1.25 six months
All other countries in the postal union	3.50 per annum
	1.75 six months

SPECIAL REPRESENTATIVES:

The Journal is kept on file at the following places where contracts for advertising can be made:
 San Francisco, Cal.—E. C. Duke, 64 and 65 Merchants Exchange.
 Denver, Colorado—James A. Tedford, 104 and 105 Ernest A. Deacon Block.
 Chicago, Ill.—Lord & Thomas, 45 to 49 Randolph St.
 New York City—Wm. Edelman, Jr., 105 Broadway.
 City of Mexico, Mexico—O. H. M. Aguirre, 17 Cinco De Mayo.

ADVERTISING RATES FURNISHED ON APPLICATION.

We have been very much gratified at the letters we have received from our advertisers and subscribers in relation to our change of name. The general expression has been that the new name expressed the character and purport of the paper and would make it more popular in the east, where the old name was not thoroughly understood.

EXTRAVAGANT.

The claims of the goldites as to the quantity of the metal they worship, that has been discovered in every quarter of the world, are too florid to be real. Were all they claim matters of fact, Rothschilds would have gold demonetized by the British Parliament in a week. The closure rule would be adopted and such a bill be put through under the plea of urgency.

The claims as to gold discoveries are immensely exaggerated to deceive the mass of the people. Rothschild is not deceived, for he knows the exact facts, and he has his nets out to catch everything that comes along. The whole thing is a siren song to lull the people to sleep in the belief that there is to be sufficient gold for the basis of an adequate volume of money to do the business of the world.

THE BALL ROLLING.

The bimetallists of Germany, Austria, France and England have concerted a movement to introduce into the parliaments of their respective countries bills for the recognition of both gold and silver in those nations. They may not succeed in securing the passage of the measures in any of those countries, but the attempt discloses a purpose to persevere, and in the end, be it sooner or later, victory must attend their efforts. The movement is especially valuable as it is likely to force an international conference on the invitation of European nations, and should it be

held, there is likelihood that they would be in a frame of mind to yield more willingly to the demands of this country. All such demonstrations in Europe tend to weaken the gold sharks of this country.

A SPECIAL PRIVILEGE.

For many years there has existed an opinion that the Navajo reservation in Arizona and New Mexico embraced good mineral districts, and efforts have been made to obtain the right to go there and prospect by a good many citizens; but, until recently, all such applications have been refused by the Interior Department.

It appears that, at last, J. U. P. Voorhees, of Denver, and F. M. Tripp, of Silverton, Colorado, have been granted a special privilege to prospect and mine on a special strip, said to be a square mile, for ten years. Just where this square mile lies is not certainly known, except to the persons named and the Secretary of the Interior. This is a special privilege, and the reason why granted to the men named can only be conjectured.

If there is valuable territory within the reservation, we do not see why the advantage should be granted to any one, two, or three persons. If it is desirable to obtain the mineral, why not make an arrangement with the Indians by which the district can be opened without partiality. Give all the people an equal chance, no favoritism, no partiality.

BOND SALES UNNECESSARY.

Nothing could have been worse than the financial management under the present administration. The plea for the retirement of the green backs and treasury notes, through funding them into interest-bearing bonds, is of the most flimsy character. The treasury notes might have been redeemed in silver coin, and would have been, had the Secretary of the Treasury obeyed the law; but it has been construed palpably in violation of express language, in order to give effect to an ambiguous phrase. This action has to an extent caused a draft on the gold reserve that might have been avoided, if there had been any disposition to subserve the public interests.

There has been no legislation to strengthen the resources of the country or to build up its industries, and nothing done to enlarge the volume of the circulating medium; on the contrary, the repeal of the purchasing clause of the Sherman law destroyed a means of expansion.

To make matters still worse, revenue legislation did not produce the money necessary to defray the current expenses of the government, which also made borrowing and the issue of interest-bearing bonds necessary; and, what was more fatal still, the reduction of duties on imports opened our markets to foreign producers, and created balances of trade against us which had to be paid in gold. This made borrowing necessary, in order to keep up the gold reserve.

If the Sherman law had been properly construed and obeyed, if the laws had been enacted which would have produced a sufficiency of revenue, and prevented adverse balances of trade, there would have been no necessity for enlarging the bonded debt. If one further step had been taken—which was opening the mints to the free coinage of silver, there would now be a volume of circulating medium much more nearly capable of supply-

ing the wants of the country, more enterprise, larger development of industries and general prosperity throughout the realm. To do so would be but following the policy of the government which had been in force for 80 years prior to 1873, and under which the country flourished and grew beyond all precedent in any age of the world.

MINING EXCHANGE.

For a long time, the subject of the establishment of a Mining Exchange has been agitated by the most progressive element connected with mining in Southern California, and their efforts have finally been crowned with success. Three meetings have been held, the last one being attended by almost all the representative mining men of Los Angeles and vicinity. A substantial sum was realized from initiation fees, and a large number of new names handed in. The list to be signed by those desiring to become charter members of the Exchange will be found at room 28, 208 South Broadway, Los Angeles, California. It was decided at the last meeting to keep the list open one week more, or until Saturday, April 4th, in order that any whose names are not on the list, or who have been absent from the city, and who desire to become charter members, may do so. It is to be hoped that every man in Los Angeles who is in any way interested in the mining industry, whether in the sale of merchandise to the mines or actively engaged in mining, will join the Exchange and work earnestly for its success.

Los Angeles has a long string of resources, and not the least important is mining, to which many of the best cities in the west owe their existence.

The great drawback to mining in Southern California has been the lack of an organization where the mines that are for sale could be put in proper shape to be presented to buyers, many of whom know little or nothing about mining, and would not be willing to take a long trip through a rough country to look at a mine—about which they would know nothing when they saw it.

The establishment of a Mining Exchange, operated by well-known and reliable people, will remove all the obstacles that have presented themselves, and the mines of the southwest, which are among the best on the American continent, will be made tributary to Los Angeles, and the benefits that will accrue to Los Angeles and Los Angeles business houses, are almost incalculable.

INEXPPLICABLE.

The United States has heretofore produced 42 per cent of the silver of the world, and with encouragement, through rendering silver mining more profitable, our percentage of productions would be much larger. It is inexplicable on any theory of promoting a nation's material interests that our policy should be such as to depress the value of our own production and discourage our own industry.

Were we to adopt the fullest monetary use of silver, the price of the uncoined would at once leap to an equality with the coinage value, or, in other words, the American production would about double in value; and, assuming that silver mining would be materially increased, it would add to our national wealth forty or fifty million dollars annually, besides giving increased employment to our people. Our silver production being so great,

European and Asiatic nations must necessarily largely consume our products, and were the price increased the more would they contribute to our wealth. That the enhanced demand which silver coinage would assure would cause the price to advance cannot for a moment be doubted.

Hence, we repeat that adopting a narrow money policy which depresses values of our productions is inexplicable. It is the more so because it is difficult, if not impossible, to perceive how such a narrow money policy redounds to the welfare of any interest except that of money-lending. A nation can never become prosperous and rich through mere money-lending. Money produces nothing, it is simply an implement of industry and commerce. Its scarcity depresses both, but abundance stimulates them. Interest is a leach upon labor, and it is always more so when money is scarce than when it is plentiful.

European nations must have our cotton, silver and maize, and why not adopt a domestic policy that will enhance their prices and compel those countries to contribute more largely to our material prosperity?

Buying more largely of foreign nations will not enhance values of our own productions, on the contrary, it will depress them. Our first duty, as well as highest interest is to do what in reason we can to enhance the prices of those commodities which other people must purchase from us.

CORRESPONDENCE

ARIZONA.

TOMBSTONE, ARIZ., March 17, '96.

EDITOR JOURNAL:—I take pleasure in sending you the following facts, which will, I think, be of interest to your readers.

The mines in and around Tombstone have been receiving considerable attention of late.

The Baron Scribner Cyanide plant will soon be running at full blast. They have five ten-ton tanks and enough ore on the dump to keep them running for some time.

The Tombstone Mining and Milling company have increased their working force. They still continue to make their regular shipments.

Will write you again when I have more to say. Yours, W. O. A.

From our Special Correspondent.)

TUCSON, ARIZONA TERRITORY,
Mar. 25, '96.

Mining affairs in this county are looking better every day; there has not been as much life or enquiry in this business in the past ten years as there has been in the past six months; all kinds of business feel the upward movement, and the best part of the onward move is in the fact that investors are taking hold in a careful and cautious manner, which means well for a continuous, stable business. The usual mining boom has made way for the actual conservative business methods, as observed in any other successful commercial venture. Mining and mining men are now here to stay as a fixture, as any other regular business or class of business men are, and will not be classed as heretofore, at least in this section of Arizona, as a rather adventurous lot conducting a fake game. The numerous inquiries and number of experts, agents and principals now here, and who have been here, have stimulated trade to a great extent, which

is observable to even strangers who visit any of the mercantile houses in this place, and the same causes have put new life into the old Ancient Pueblo in the way of building, improving the public streets, etc., making the old town look as if it really was in the United States, and inhabited by business-like, progressive, intelligent American people.

The Rosemount Mining & Smelting Co., 45 miles south of Tucson, in the Santa Rita mountains has bonded their copper property to Messrs. Lewishon & Bros., of New York, the well known metal dealers, bond runs until July 1, '96, consideration \$31,500.

The Canada del Oro M. & S. Co., Limited, operating the Tucson furnaces, blew in on Feb. 22nd, are turning in a high grade copper matte, carrying considerable gold and silver.

Messrs. Browder and Hurley closed the deal for the Franco American, Normandy and other mines in the Old Warsaw mining camp, seven miles south of Oro Blanco. Mr. Browder will be the general manager, as these properties are good and the management of the best, there will surely be another success in mining in this section. These properties are in the immediate vicinity of Wm. Hartt's mill and mines that have been making such a signal success, and in close proximity to the Sorrel Top gold mine, one of the best gold properties in the county.

The Pima M. & S. Co., operating the Old Yuma lead mine, are now down about 80 feet on the new contract shaft, and have 12 solid feet of good ore.

C. C. Copeland, who is the confidential agent of the McCormicks of Chicago, of the McCormicks Reaper fame, was here looking after a silver and gold property, bought by him several years ago for himself and the McCormicks, situated in the Cabibi district, rumor says that the property has been sold to eastern people. This property is patented, and is said to be an excellent one. For many years past it has not been worked.

The Copper Queen people, who are operating the Mineral Hill copper mines, in the Old St. Xavier camp, have discharged all but eight men, they are now sinking on this property altogether with the object of developing its depth.

OLD TIMER.

CALIFORNIA.

PINON MOUNTAIN, March 19, '96.

EDITOR JOURNAL:—I have not written any news from this district for a long time, as most of the mines have been going through that stage which all new camps must endure, I mean the advent of the bogus "promoter."

The Lost Horse Mine is an exception, as the owners are wealthy and don't need outsiders to help them; but the Desert Queen and Pinon Mountain group are emerging from their troubles slowly but surely—the former mine being now in the hands of Mr. Steele, of Perris, and the mill and most of the Pinon Mountain group are again going to be worked by Tingman & Holland.

For the sake of miners and prospectors, who want means to fully develop their property, a word of warning from the JOURNAL (which is to be found in every miner's cabin) may be a world of benefit.

A gang of fakirs got in here, who, by means of bogus letters and pretended backing from Colorado millionaires that they happened to be acquainted with, or pretended to be acquainted with, got options and bonds on mines and went to work them—and did they not work them in fine shape!

From the Desert Queen free milling rock, I understand they got about 20 per cent of the gold, and concluded it paid better to ship the rock to El Paso to smelt it, as it carried about one per cent of lead!

But the fellow who did up the miners and laborers on Pinon Mountain group was a dandy. He posed as a mining superintendent from Grass Valley, and I have actually seen reports from him of mines in this district signed H. B.—m, M. E. Mining engineer!!! Mining engineer! and he would tell the old section foreman (his superintendent) to work his men stoking down the ore in an open cut.

He also kept a carpenter to take the pick handles off, so he could sharpen the picks. Oh, he was a daisy of a mining engineer.

He started up the Little Prospect mill with a force of six men (three men to the stamp) and ten men to get out ore.

The ten men, including the section boss, ran tunnels at from six to fifteen feet under ground, and, as none of them ever saw quartz before, they sent granite, slate, or any matter that shone in the sun, such as mica and hornblende, to the mill, where the M. E. used to save up the most brilliant specimens as rich samples of gold ore, as he called it.

The shoes fell out at the mill one day, and all the six mill men let it pound away until some prospector explained to the M. E. that it might injure the mill to pound with the boss heads bereft of the shoes. Of course, the M. E. got no gold, and his capital, which was only \$1.75, went for chewing gum. The miners were unpaid, and the owners kicked him out. As even his first payment was n. g. and his mythical backer did not back him worth a cent. He cannot do any more injury here except to blow around of having "the property tied up." However, I understand the owners will start up again shortly. But a word from the JOURNAL will put other camps on their guard against such fraudulent M. E.'s.

John Lang is working on some very good-looking ledges near Black Canon. He has milled some of his rock and appears satisfied with the results.

J. Nicholou and his partner are working on the same mountain as Mr. Lang. They have recorded two claims and Mr. Lang three.

John Neuer has sold one of his claims, near McHaney's mill, to Mr. Rooney, who has a lot of the rock at Tingman & Holland's mill, where he intends to make a test run.

The owners of the Hexahedron mine are going to finish the cross cut from tunnel this month, when, if it shows up as on top, it will be a magnificent prospect. It shows 60 feet wide on top, and a fair sample will assay a little over ten dollars a ton.

We had about 14 inches of snow last week.
MINER.

VIRGINIA DALE MINING DISTRICT,

SAN BERNARDINO CO., CAL.

March 16, '96.

EDITOR JOURNAL:—It may be of interest to your readers to learn that a new district was organized at a meeting held at Lyon's mill, March 9, '96. Twenty men were present, all interested and actively engaged in its development. Many were unable to attend. The boundaries include the old Rustler district, which long since lapsed. They are defined as follows: Commencing at a point in Clark's Pass, running thence in a southerly direction to the Riverside county line, thence along said line in a westerly di-

rection 25 miles; thence due north to a point 5 miles north of the San Bernardino base line; thence due east 25 miles; thence in a southerly direction to the place of beginning.

The old Virginia Dale mill is near the center of the district.

Mr. F. G. Killian was elected recorder. Few by-laws were adopted. The two requiring any mention define the amount of work required as the annual assessment and to the fees of the recorder.

The stamp mill at Lyon's Mill is running on high grade ore from the Gipsy mine. I have not seen this mine, but those who have, report it as showing a fine ore body, and predict for it a bright future. This mill is a great boon to a very large district to the south.

Messrs. Killian & Sabathe are running the mill at Dry Lake and prospecting a number of claims to the south. They are greatly encouraged by the outlook. This mill, and the one at Lyon's Mill have paid for a great amount of development.

About five miles to the south west of Dry Lake, a number of claims are being thoroughly prospected.

The largest amount of work has been done on the Carlyle. Messrs. W. W. & E. R. Halesworth and D. R. McRae own seven claims on this lode. They have sunk two shafts, one 92 feet the other 500 feet to the north is 155 feet in depth. A drift has been run 656 feet, to connect with the latter. Ore was struck 95 feet north of this shaft. A drift was run along the ore body in a heavy talc gauge, as the ore was too loose to stand without timbering. A cross cut, 50 feet north of this shaft, shows a three feet vein. Another, 25 feet north, shows an 8 feet width of free milling gold ore, which, from appearances will average all over not less than \$8 or \$10 in gold. The drift is now 100 feet south of the shaft, and still shows a strong ore body. It is the intention of the owners to sink the shaft not less than 150 feet below the level of the drift and prospect from that depth. Unlike a great many mine owners in this and other lands, they want a mine first and afterwards a mill. Reversing this operation has been disastrous in a very marked degree to Southern California.

Adjoining this property on the north, and running theretrom in a southwesterly direction, are a number of claims in which Messrs. John G. Burt, H. B. Botsford and Goodwin are interested. These claims have all been prospected by shafts, from 30 to 50 feet in depth. It is the intention of the owners to drift along the ore body, starting at the Botsford, near where the lode joins the Carlyle. The work so far done has demonstrated that the ore bodies are large and high grade.

About half a mile east, the owners of the Carlyle are sinking a shaft on the Morning Star. They are down 70 feet. This ledge is well defined and though not so large as the Carlyle, shows up some very fine ore, running from \$15 to \$200. It would be safe to say that the ore dumps would average \$30 gold and very free milling.

Just over the mountain to the east, probably quarter of a mile, Messrs. Ferguson, Ellerman, Gauthier and St. Germain are drifting to tap a body of ore on the White Star and Ivanhoe. This drift will be 80 feet in length. They have run 250 feet and are down 90 feet, with an air shaft. Shafts were sunk and levels run on the claims sufficient to show the size and permanency of the ore chute. A sample taken all along a 30 foot drift on the Ivanhoe averaged \$48.50 in gold.

The pay streak being two feet wide. An open cut on the Monitor shows a ledge 9 feet wide, two feet of which is pay ore. Other claims might be mentioned. Indeed, within a radius of five miles from these properties, there are not less than one hundred locations. I have described the above, not because they are the only ones in the district, but because I have seen them, and the work done on them speaks for the rest.

This fall Mr. Burt sunk a well, 125 feet, two miles to the north of these mines. The quality of the water is first class and there is an abundance of it.

These claims are all in porphyry, the sides of which are covered with dendritic depositions of manganese. They are, undoubtedly, true fissure veins, and between clearly defined walls and will prove permanent. The gangue is quartz. A large per cent of the ore is free milling; the remainder is iron, copper and lead sulphurates, with some lead carbonate and sulphate.

Four of the mines could be called specimen mines, although very large assays could be gotten from any of them, but for such large bodies of ore as have been disclosed the yield is uniformly high grade.

Why capital has neglected this country so long can only be explained by the fact that until lately so little work had been done, now this objection is obviated.

It is the intention to start a store at Burt's mill, and a petition, numerously signed, has been circulated, asking for a postal route from Banning, with offices at various points along the road. If this is granted, we will feel that we are not so remote, and it will be one step in hastening this country to its destiny, viz., a big camp.

W.

A MINE WITHOUT MONEY.

That Is the Way a Couple of Smooth Citizens Attempted to Buy One.

STOCKTON, Cal., March 18.—Harry Routledge, superintendent and part owner of the Pure Quill mine, Angels Camp, has notified the police here of an attempt to bunco himself and partners out of their mine. A. W. St. Clair and Frank Worsley went to Angels a short time ago and posed as wealthy Englishmen, claiming they had just purchased a mine in Colorado for \$40,000. They offered to buy the Pure Quill. The offer was accepted and the papers drawn up. Sunday they drove here with Routledge to meet a man supposed to be coming from San Jose with \$12,000, the first installment of the purchase price. They borrowed money of Routledge, who also paid the expenses of their stay at Angels. The Angels man refused to sign up as no money was in sight. The men decamped, taking the papers and specimens, without paying the borrowed money. They may attempt to sell the mine on the strength of the specimens and papers they now have, and bunco some one else.

The California State Miners' Association on March 14th, at San Francisco, recommended the names of a committee of four to President Cleveland as commissioners in California under the new mineral act bill now passing through Congress.

A Big Mining Deal.

SAN FRANCISCO, March 18.—The Black Oaks group of five mining claims in Tuolumne county has been sold to an Eastern syndicate for \$300,000.

Miscellaneous Mining News.

ARIZONA.

The Mammoth mine at Goldfield will be opened up in a short time again. A good body of ore has been struck.

Morg Hedgpeth and Sime Gallen left Tombstone March 22nd for the Humboldt mine in the South Pass. Favorable reports continue to come from this section, and the mines are looking better daily as work progresses.

Mr. John Casey, one of the owners of the famous Casey group of mines in Dos Cabezas, was in the county seat March 20th on business. The Casey mine, owned by the two well known brothers, is conceded to be one of the best gold properties in the territory, if not in the west. Over 2000 feet of work has been done on the property, entirely development work, the various ledges opened and underground wealth exposed. The Casey brothers have been residents of Cochise county for eighteen years, and are numbered among the pioneers of Dos Cabezas. They have overcome the hard struggles of mining and its attendant vicissitudes and now fortune is about to smile upon them to the extent of \$100,000 for their valuable property.—*Tombstone Prospector*.

Phin Clanton came in from Webster springs yesterday, bringing some rich specimens of gold ore from a new claim belonging to E. J. Edwards and himself; also some very good rock from the claims owned by Messrs. Edwards, Clanton and Bound, of which we made mention some time since. Mr. Edwards will organize and incorporate two companies to operate the group of claims last mentioned, and expects parties here in a short time to arrange for putting up the necessary machinery to work them.

Prof. James Douglas spent last week here looking into the affairs of the United Globe mines, and conferring with Superintendent E. H. Cook on plans for future operations. An important improvement decided upon was the building of a cable tramway between the Buffalo mine and smelter, to facilitate the delivery of ore. Professor Douglas expressed himself as highly pleased with the work accomplished since his last visit and the very successful operation of the plant.—*Belt, March 20*.

The Volcanic mines near Gila Bend are reported to have been sold by Benjamin E. Lower for \$50,000. The purchasers are to erect a 50-ton smelter.

The bond on the Little Jessie mine in Pearce district, owned by Bacigalupi, Howe, Butler and Welch, a lengthy account of which was recently given in the *Prospector*, has been filed for record, and it is expected that Messrs. Norton & Co. will open up this promising claim at once. We hope later to give further details and progress of this certain to be bonanza.

Dennis Sullivan and C. L. Hall have decided to again start the mill at the Mammoth mine, as a good pay body of ore has been developed.

M. M. Elders and others filed location notices March 20th on the Lady of the White House mine in the Vulture mining district.

Robt. McCormick was in Tombstone March 21st from his mines near Turquoise, Cochise county. He has four locations and they give promise of great value. A ledge ten feet wide and streak over a foot in width that carries 30 per cent is certainly a very flattering showing that can be equaled by but few mines. With further work and prospecting his section, which has lain dormant for many years, will receive an impetus in copper mining that will develop some startling discoveries.

The Pacific Coal Company, with a capital stock of \$1,000,000, divided into shares of \$100 each, was incorporated in Phoenix the 20th ult. They propose to deal in coal and other mining properties.

Dr. Trippel, who is superintending the development work of the Rossmont mining property, returned to that camp March 21st, after a short visit in town. The work at the mine is progressing rapidly and the results are highly satisfactory, being better than was anticipated. Thirty-five men are employed, and it is more than probable that upon the expiration of the bond under which the mine is now being worked, that it will be sold outright.—*Tucson Citizen*.

The deal was closed last week by which the New York stockholders in the Kasser Gold Mining Company acquired the interests in that property of R. E. Humphrey and C. H. Hill, and the first payment has been made. Recent developments have proved the value of the property and the ore is said to be now more abundant and of a higher grade than at any time since the company began operations. A pipe line, nearly a mile in length, is to be put in about April 1st to increase the water supply. Considerable bullion has been produced during the past three months, and the outlook for future success is bright.

The Copper Queen Company are shipping quite a lot of specimens to the Company in New York City.

C. A. Randall has leased the old Pratt mill, on Big Bug, and is putting it in thorough repair, and will start it up in a short time. He will work a lot of ore of his own at first, and will then work custom ore.

Very rich ore is being taken out of the Silver Flake mine. This property is located only six miles from town, and gives promise of becoming one of the famous producers of this section. Work on the new mill being built to work the ore is progressing satisfactorily.

Frank Wright, an old Utah and Colorado miner, brought in some fabulously rich gold ore a few days ago from near the head of the Hassayampa. It is even stated that it is the richest ever seen in Prescott. It is decomposed quartz and is fairly alive with gold. This specimen would go away up into the thousands per ton. He says there is from one to three inches of this quality of ore in the shaft, while there are from six to ten inches of ore which will mill and plate \$50 per ton. The claim is located within about a mile of the Senator mine, and is an old claim. He discovered this ore while doing some work on the claim.—*Journal Miner*.

It is reported that Chauncey D. Clark has sold an interest in the Waters mine in Santa Maria district to wealthy people in Peoria, Il-

linois, and that it is the purpose of the new company to increase the capacity of the mill to 100 stamps.

Hon. Nick Galles, during his recent trip to the Santa Maria country, purchased for cash two very promising claims in that district and will shortly commence work developing them. He proposes to sink a shaft to a depth of 300 feet to ascertain what they contain. Mr. Galles is also working another claim in the same district called the Swiss Belle mine, and owned by the Swiss Belle Mining Company.

The name of the new claim at the head of the Hassayampa, from which the fabulously rich ore was taken recently is the Surprise. It is owned by Frank Wright and Ed Hoagland. In addition to the very rich ore taken out they have about thirty tons which will mill \$50 per ton which they will have worked shortly at the Senator mill. The claim is located on the mountain side just below the old Jeff Davis ranch. The Senator Company had it located once, and cut the timber off it in making the improvements, but never worked the claim otherwise. This rich ore was struck at a depth of only ten feet from the surface.

A Gold Getter.

A test of the Marshal gold saver was made the other day in front of Traver's real estate office at the corner of Second avenue and Washington street, Phoenix, by E. E. Ford, the assayer, which proved very satisfactory. Thirty pounds of dirt was taken as a basis, ten pounds of which was washed down from six to twenty-five colors. The remaining ten pounds was put through the Marshal gold saver and produced \$4 to the ton. After this process the dirt was washed and produced only one color, which goes to show the machine's value as a wealth getter.

At the Mormon Girl mine in Cave Creek district, the Huntington mill that has been running for the past few months has been demonstrated a failure on the peculiar class of ores necessary to be milled, and so a five-stamp battery of the regulation pattern has been ordered and will soon be in place. The ore is still in large body and of uniform richness and the prospects for the mines were pronounced never better.

Kingman Sampling Works.

The following is the weekly report of the Kingman Sampling Works:

Jose Canos, two and one-half tons.
A. N. Eaton, one ton Prince Albert.
Chas. Gross, small lot.
W. H. Lake, two and one-half tons Nighthawk.
Hamlin & Co., one and one-half tons.
Wm. DeBeque, two and one-half tons White Hills.—*Mohave County Miner*.

Arizona Sampling Works.

The following lots of ore were received and sampled at the above works in Kingman last week:

McMahon & Larkin, ten tons high grade Nighthawk mine.
McMahon & Larkin, five tons rich screenings, Nighthawk.
Clark & Davis, five tons, Nighthawk.
C. E. Sherman, three tons silver and lead Mineral Park ore.
Wm. Koshland, two tons silver ore.
Will Nelson, one ton gold and silver ore.

Schofield & Stewart, two tons Mocking Bird mine.

Davis, two tons chloride ore.

Davis, one ton sulphides.

One lot three tons, Fenner, Cal., gold ore. Shipped two carloads to Pueblo.

CALIFORNIA

LOS ANGELES COUNTY.

Busy Acton.

Of all the little towns in Los Angeles county none can boast more of a real active boom than Acton; and none has certainly a brighter future than that place. Besides the 5-stamp mills here, there is being put up in San Francisco now a very fine mill that will crush one hundred tons per day. This excellent mill is going to be erected on the Pearson property, up the Aliso canon, and will be completed in about six weeks. Besides, there is talk of another 10-stamp mill one mile further up the canon. This will give Acton seven mills in all. All our surrounding country contains, principally, gold-bearing ledges of quartz.

The Red Rover mine and mill have changed hands. Mr. Henry T. Gage, a gentleman well known in all Southern California, has taken the reins, and this valuable property will now be opened to its full extent. Mr. Gage has with him Mr. Joe Gilbert, one of the mining experts of the west, who will superintend the works.

Mr. Walker is doing some good development work on the Escondido, and no doubt will put a mill in there in the near future. Besides the above, several new houses are being put up.

The Red Rover having begun work on their water plant in the town of Acton, a large supply of water will be developed, and the same will be pumped up to the mine, three miles, at an elevation of 700 feet. It will require a powerful plant on the Gleason Mountain.

Mr. Tom Kelly has opened up some fine rock—a large ledge—and it is hoped that this summer will see the mountain alive with work.—*Acton Rooster*.

MONO COUNTY.

Bodie Cyanides.

The Standard Co. is now putting up another cyanide plant. It will be erected down the canon near the old Wagner mill site. It will probably be in running order by May 20th. After this is completed, the Bodie cyanide plants will have a daily capacity of about 410 tons, as follows: Standard Co., 200; Southend Cyanide, 160 tons; Bodie Tunnel, 25 tons; Parr & Tyack, 25 tons. The snow is nearly all gone, and unless more falls, it is expected that the different plants will be started up within a month.

RIVERSIDE COUNTY.

A new strike was made in the McHaney mine March 16th in the new shaft being sunk and at a depth of about fourteen feet very rich ore was encountered.

The Hensch Mine Liable to Prove a Bonanza to Its Owners.

The death of Hensch, the mine owner of Riverside county a few months ago, enabled several capitalists of that place to secure his mine, and it is being developed with excellent results. At the surface the vein was but eight inches in width, but a shaft has been

sunk 100 feet, and a tunnel is being run to develop it; at the present depth the vein has widened out to 32 feet, showing a veritable bonanza of richness. At a depth of 50 feet the vein had a width of 15 feet, showing a gradual growth all the way down, and it is possible it will prove a millionaire maker to all of its owners.

Near this mine, and apparently in the same ledge, is located the Rattlesnake mine, owned by Dr. Huff and others of this city. Work will soon be commenced to sink a shaft and develop this mine, and should it prove a companion to the Hensch mine in richness it will awaken renewed interest in mining circles in this county, although the mine lies just across the line in the county of Riverside. Dr. Huff is also part owner of a mine about half way between Barstow and Goler, that gives brilliant prospects for the future.—*Saturday Review.*

Messrs. Briggs & Morehead have bonded the La Posta Mine, the eastern extension of the Leon. They are down thirty feet, and have eighteen inches of ore in the bottom of the shaft.

The 5-stamp mill of J. B. Dennis & Co. is running on Indian Queen ore.

S. R. Porter, general manager of the Leon Mining Co., was in Los Angeles last week. He told a JOURNAL reporter that his company were working fifteen men at the mine. The main shaft is now down over two hundred feet, and the second level has been started at the two hundred foot level. The vein at the bottom of the shaft is nearly twenty feet wide.

The Alice mill has been running for the past week on ore from the Snow Bud mine.

The Chilson Bros., at Hemet, report a two-foot vein of \$40 ore in their property.

French & Day are pushing work in the drifts of the Golden Chariot mine at a depth of 300 feet. They have a fine breast of ore, similar in character to that in the Santa Rosa, but of greater richness.

On March 13th E. J. Fuller and E. G. Boone, two well known miners who have been working at the Good Hope for some time past, went out to work the Lucky Boy mine, near Menifee, which they have leased from the owner, Sam Walker. The Lucky Boy is a promising claim, but is not developed to any extent.

PERRIS, March 23.—Mining matters are assuming a more satisfactory shape than they have taken the last two or three weeks. Several of the miners that were thrown out of work by the closing down of the Good Hope and Santa Rosa mines have been out in the hills prospecting with good results, and a number of claims will soon be filed. The Santa Rosa put a number of men to work last week and commenced work this morning with about twenty-five men and ten stamps pounding. It is understood that the late trouble will be satisfactorily settled in a few days.

The affairs at the Santa Rosa mine have been adjusted so as to allow the operation of the mine and stamp mill. The Santa Rosa is considered one of the best gold mines in Southern California.

It is reported that the Good Hope mine

will soon be worked again under the management of Mr. Sigafus, its former owner.

Mr. and Mrs. W. M. Stover have returned to Perris from Los Angeles, and will make their home at the Santa Fe mine. This mine is one of the oldest in the Pinacate district, and would be numbered among the best if the owners had not been hampered by lack of means to properly develop it.—*Riverside Enterprise.*

Mining location notices were filed in Riverside March 24th by A. G. Tingman, et al., the Annie and Copper Line; by C. A. Stewart et al., Choctaw No. 1; by H. D. Converse, the Empire mill site.

Work on the Menifee mine and mill is being vigorously pushed, and the mill is now turning out the yellow metal that is highly satisfactory to the owners.

Down the creek, south of Perris, the hills, for miles, are dotted with tents, windlasses and other mining outfits, and "tall yarns" of big finds are being reported.

A mining transaction, says the Elsinore Press, has been placed on record which bears promise of being a good thing for Elsinore. Messrs. Grosse & Lane of Chicago, and Mr. Balfour have secured one-half interest in the Old Dominion mine, owned by Messrs. Wunder & Willetts, with an option on the other half. Some of the ore has been sent to Los Angeles for test, and further developments are being made. They have also obtained interest in the placer mines of the ancient river bed.

LOWER CALIFORNIA.

Mining Notes.

Mr. H. G. Hayes came in March 19th from the Piedad mine in the Jacalitos district. Mr. Hayes states that the stamp mill has been brought over from Alamo and that it is now being placed in position. A number of men are working in the mine and two drifts are being run of 140 feet. A large amount of mining supplies arrived for the Piedad on Wednesday's Pacheco, and is now on the way to the hills.

Messrs. Davis and Munsen of the Viznaga mine arrived from Los Angeles on the boat March 18th. On the same boat were eleven miners who will be employed on the Viznaga and will swell the number of employees to nearly fifty men. They all left for Mexican Gulch later.

Mr. Frank Davis of Calmali, returned March 17th from a visit to the Jacalitos and Zaragoza districts. He considers the Recompensa a very favorable looking property, and was much pleased with the appearance of the mines in both districts. They are drifting on the Recompensa and getting the Bryan mill, which has recently been placed there, in working order. It is estimated that the ore will run thirty dollars per ton.

The weather is now said to be delightful in the hills, and prospectors are busy in all sections.—*Lower Californian.*

MEXICO.

Sabinal, Mexico.

The old reliable Dos Cabazos mine in this district, under the management of Monroe Harper, is making shipments to the Deming sampler on an average of once a month, in

carload lots. This ore is the richest which is brought to that point. A large force is employed and ore continues to be found in apparently inexhaustible quantities.

All of the big producers in this camp are reported to be maintaining their reputation for money making properties. Quite a deal of the ore is treated at the smelter in the camp.

The Secretary of Hacienda has declared the following mines forfeited for failure to comply with the laws:

San Jose district Papasquiaro, State of Durango; Buena Fe district Durango, Durango; La Reforma, district Tamazula, Durango; Santa Elena and El Pinzon, district Sultepec, Mexico; La Azteca, district Maravatio, Michoacan; Quebradilla, district Tamazula, Durango; La Victoria, district Mezquital, Durango; Recompensa, district Tamazula, Durango; San Antonio de los Negros, district and State of Guanajuato; Socavon del Refugio, district Sombrerete, Zacatecas.

It is stated that Mr. Howell Hinds has sold to the English syndicate represented by R. R. Symon and Mr. Coelet three-fourths of his interest in the Grand Central and Amarillas mines for £150,000 sterling, retaining one-fourth interest, entirely unassessable.

The territory about the New York mine, situated on the line between Sonora and Chihuahua is in dispute between the two states. The inhabitants desire to be under the authority of Chihuahua, but the authorities of Sonora have always had charge and collected taxes.

Mr. F. H. Seymour has been granted by the State of Sonora a concession to build a narrow gauge railway between Torres and Minas Prietas, and will immediately lay down there the material from the Cerro Blanco road. The maximum rate of freight is to be forty cents per carga, and maximum fare one dollar. The concession, which extends fifty years, permits the extension of the line to Soyopa, if desired.

It is reported that a party of English investors now at Minas Prietas have offered their owners £50,000 sterling for the following named mines: Rey del Oro, Sarpresa, San Placido, Don Ignacio, San Pedro, Veta Madre, La Reina, Great Eastern, Occidental, Blanca Julia, Fortuna and La Union. The mines first named are owned by La Compania Union Minera de las Prietas, and the others are owned by companies that bear the same names, except La Union, which is owned by Señor Jesus Santa Cruz.—*Nogales Oasis.*

At Santa Eulalia they are now expecting to strike ore any day. The 700 foot shaft is being used entirely, and drifting from this level is well under way. The air is reported to be very bad in this shaft, but as soon as connection with the old shaft is made the air will be much better. The mine caved from the 900 foot level down to the 1400 foot. From the 900 foot level up she is all right. There is in all probability enough ore in this mine to last a century.

The city office of the Gates Iron Works, Chicago, has been removed to 1112 Masonic Temple, where they will be pleased to have all their friends and patrons call and make their office headquarters when in Chicago.

NEW MEXICO.

Hon. W. H. Patterson, Captain A. B. Fitch and the latter's attorney, W. S. Williams, last evening closed up finally the Graphic mines sale, whereby Captain Fitch and his Philadelphia associates come into complete control of these celebrated Socorro county mines. The price was \$90,000. Mr. Patterson, former lessee of the mines, negotiated the sale, and the proceeds were divided equally between himself, Mr. Mandersfield and Col. V. S. Shelby. The final payment amounted to \$15,000.

It is reported that Wm. Mehriman has sold his claim in the Jicarillas, the Prince Albert, to Colorado parties for \$10,000, a portion in cash down, and the balance in one and two years, the purchasers to develop the property paying to Mr. Mehriman a percentage of the proceeds until the entire purchase price is paid.

Output of Hillsboro gold mines for the week ending Thursday, March 19th, 1896, as reported for the *Advocate*:

	Tons
Wicks Mine.....	95
Richmond.....	105
Happy Jack.....	75
Animas Peak and Cement mines.....	60
Catherine, Key West, Eldorado, Garfield and Bull of Woods.....	55
Freiburg	30
Total.....	370

Total output since Jan. 1, 1896—5,070.

The Matilda Mining Company of Albuquerque has received some specimens of ore taken from their Great Eastern mine which looks promising. The company has commenced development work on three other of their mines, the Great Western, Iron King and White Ash. Ore from the Iron King assayed in Chicago, yielded \$10.74 in gold, the lead on which is fourteen feet, with this is eight inches of talc, assaying \$6.25 in gold and silver. These mines are eight miles from La Belle.

L. G. Morris and five sons are working a copper mine about fifteen miles from Rincon, and will soon ship to Deming and El Paso. Over ten tons are now on the platform ready for shipping.

The Lynch mill at the Red Bandanna mine near Elizabethtown is in operation, and is said to be turning out \$1,500 a week.

The bored wells at Golden, sunk by M. Harrold of Grafton, Pa., for the Golden Hydraulic Company, were sold at public auction recently, and were bought in by Mr. Harrold for \$200.

W. L. Trimble, who returned to Albuquerque from Bland last week, reports the shipment of about ten tons of ore daily to Thornton. The value is placed at \$90 per ton.

N. Bell, of Pinos Altos, had four gold bricks on exhibition in Silver City, two weeks ago last Saturday, which were worth \$12,000. He also has 120 tons of concentrates, from which these bricks were extracted that will run \$35 per ton. In addition to the 120 tons of concentrates, from which the gold bricks were made Mr. Bell also has 80 tons more which are equally as valuable, which are now being shipped for treatment.

The new smelter at Silver City is progressing favorably. A new furnace has been ordered, and when it arrives the plant will be started up. Considerable ore is on hand.

ernment considers the grant contest as virtually settled and will stand between the miners and the grant claimants, which action is of the greatest importance to that district.

LA BELLE.

Doings at the Great Mining Camp of New Mexico.

Ore from the Edison began moving to-day. It is being packed over the range and will be hauled to the railroad at Catskill.

The vein cut in the tunnel of the La Belle Gold Mining Company last week proved to be better and wider than was at first supposed.

Messrs. A. C. Smith and Chas. Blethen came in Monday and have been looking over the camp thoroughly with a view to putting in a mill.

In the crosscut run from the bottom of the 100-foot shaft in the Snow Storm, a Rio Grande property, the vein was cut at a distance of 20 feet from the shaft, and is 14 feet wide between perfect walls, and is a fine grained quartz, literally full of pyrites.

The Bessemer group, consisting of the Lillian, Bessemer and Bessemer No. 2, located on the east side of the Comanche creek, have been sold to J. R. Ferguson and L. C. Downey, of Houston, Texas, and G. W. Downey, of La Belle, New Mexico. Some fine-looking ore has been discovered and a fine vein shown up on the Lillian, on which a 100 foot shaft will be started at once.

A strike of more and better ore was made in the shaft of the Old Hat property. With depth it is beginning to show sulphide, as has been the case with the majority of claims here. This is one of the best features of the camp, as sulphide is a fine concentrating ore and is also one of the best qualities for cyanide treatment, especially by the Pelatan Clerici process.

Chas. Allen is in charge of the work on the Chance mine in this district, leased by himself and Burk from the Haggan-Hearst company. Good ore is being taken out and the property is showing up nicely.

H. Lesdos is working two men on his property in this district, and is making shipments every week or so.

TRES HERMANOS.

M. C. Weaver is working the famous Cincinnati mine and also developing several new prospects. Mr. Weaver continues to make regular shipments of high grade ore to the sampler at Deming.

Jim Martin is doing good work on his mine in this district, and is getting out some good ore, shipping every few weeks. The mine is being systematically developed and the ore bodies are holding out nicely.

HACHITA.

Bell and Gleason have about completed the work of getting their concentrator in shape for working the ore on the dumps of the Horneret mine and expect good results. They are also working a new prospect on Sunnyside.

Bob Anderson and John Weems are working their mine in the Apache camp and are taking out considerable high grade ore.

PYRAMID.

H. E. Hoffman will start his concentrator within a few days, and in addition to handling his own will also treat low grade ore from the surrounding camps. The mine is showing up well, and sinking is being continued. Considerable work on new claims is being done by miners, and this camp promises to hold its own this year.—*Headlight*.

Good News for Cochiti.

Mr. Thomas Lowthian has received a letter from an official in the general land office at Washington to the effect that the land office at Santa Fe would receive instructions from the department to accept applications for patent of mining locations in the Cochiti district. If this is the case it would appear that the gov-

Last Wednesday the board of regents of the School of Mines, Socorro, held a meeting at the office of the secretary and transacted much business. It was decided to hold a commencement on the 7th day of next May, and preparations are now under way for the event. It is intended to make the exercises interesting to all and some of the best speakers in the territory will be asked to participate.

E. S. Hoyle and Chas. Hamilton spent some days prospecting in the Bonita Camp the past week. They report the Parson-Huntington mill as being in operation on Hopewell ore.—*Eagle*.

Hillsboro Mines and Mills.

[Advocate.]

Surveying parties are examining the North Percha and Animas for reservoir sites, in the interest of the Placers syndicate.

The ore vein in the Wicks 300-foot level is said to be fully two feet wide.

Mr. John B. Farrish, the expert, has been detained in Chicago by severe illness from which he is now recovering, and may be expected here every day to make examination of the Snake group of mines.

Supt. Hall has about eight men at work on the Snake mine, taking out and sorting ore.

Baxter, Kennedy & Classon, three good, all-round miners, have the contract for 140 feet cross-cut work on the Eighty-Five, and have begun work.

The Placers road has been enlivened of late with teams hauling lumber and timbers to the Wicks and other mines in that direction.

From fifteen to twenty men are making a good living dry washing the placers near Faulkner.

McPherson & Co. are doing some work on a new location on the great porphyry-lime contact, near where it is intersected by the Wicks vein.

Robt. Watson has made a good hit in his lease on the Richmond-rich ore and a big streak. Bob has been out of luck for some time and it is fairly his turn.

Mr. J. C. Stout, principal owner in the Champion mines, writes that he will be in Hillsboro very soon, with intention of starting some important work on the Eighty-Nine and Champion.

Louis Laramy has contracted to make a raise from the Wicks 200-foot level to the old shaft sunk by Daniels and Buck in 1893.

Robin & Macy have struck a vein of gold quartz in the Flora Temple.

Geo. Richardson has secured a lease on the Catherine mine, and has commenced work thereon. The Catherine is one of the oldest locations in the district and of late years has been extensively developed. Some good ore chutes are exposed in the main workings, and the lessee will be able to produce pay ore from the start.

Alex. Bentley & Co. are reported to have leased the Trippie. In the New Year issue of the *Advocate* a full description was given of the condition of the property and of the ore in sight. No better showing or chance to make money could be found, and we predict a large measure of success for Mr. Bentley and his associates.

MOGOLLON.

What promises to be one of the best mines in the camp is one which was known as the Eighty-Eight, now owned by Will Weatherby, Ernest Kitt and Noble Banks. The boys are taking out shipping ore. Some already sacked will go in gold and silver from \$300 to \$1,100, and they have a world of good milling ore. They have driven on the center ledge or streak (for there are actually three veins or streaks of very high grade ore all within the side lines of the claim, outside streaks dipping to the center,) 180 feet. The center one, where the tunnel is located, is almost vertical in its dip. They appear like huge feeders, and get closer and closer as they go up the hill, where the three center at the top of the mountain. The tunnel will, at 230 feet, be under this great ore pile. Big things are looked for, and the work is being watched with interest. The boys have the best wishes of the entire camp, as they have labored very hard to develop this remarkable mine.

Cooney, Coats and Schaible are working a small force in the lower workings, stoping and drifting, and have attained a depth of sixty feet in the shaft. The water increased to twenty-five gallons per hour, which was more than could be handled with profit without a pump. They put in a floor with sufficient depth below to form a sump and hoist water every forty-eight hours. They contemplate putting in a hoist, already on the ground, which can be operated by power generated by a Pelton water wheel.

Tom Cooney and Tom Cosgrove have bonded their Little Charley mine to J. F.

Connors of Toledo, Ohio; consideration, \$1200 down, and \$9000 in twelve months.

The Maud S. still continues to ship bullion in large quantities. The mill is under the able supervision of Charley Smith, and the mines in charge of Mr. Gunther. Col. Bennett is in Denver, and the office work is being very ably attended to by his son Frank.

The Deep Down mill is running custom on ore furnished by Jack Kennedy and Prof. Carl Anderson from the Last Chance mine. The mill is also working very good milling ore from their Deep Down mine. The management contemplates putting in stamps.—*Correspondence to Silver City Enterprise.*

The Eberle mine at Mogollon is employing a force of five men on tunneling and development work. F. X. Eberle, the owner of the property, says he intends soon to erect a fine mill for the treatment of the product of the mine. There are several hundred tons of ore now on the dump ready for treatment.

The Newcomb mill, at White Signal, is nearing completion.

Thomas Ritchie, who has been in Secor from Elizabethtown, Colfax county, recently made a sale of a placer claim, up there, for \$12,000 to parties who will work it for all there's in it.

The Washington mine in the Cochiti mining district has nine cars of high-grade ore on the track, and will ship this week to smelters. Some of this ore runs as high as \$500 per ton, mostly gold. The Albermarle mine, Cochiti district, has two cars on track to ship to the smelter also. These two mines will be steady producers now, and will ship from six to ten cars per week.

Mr. Mackey, owner of the C. O. D. mine in the Black mountains, Dona Ana county, and who was in El Paso last week, says that he let a contract Wednesday for a 50-foot tunnel in his property. He is confident he has as fine property as any in the camp. Assays from the top of the dike show \$10 in gold and it is free milling ore. Mr. Mackey says C. B. Eddy has secured options on nearly everything in sight out there.

The attachment has been released on the "New Mexico" mine at Golden, and work will be resumed on it at once.

Two surveying outfits are in the placer field, of the Hillsboro district, and a large amount of work in shafts and excavations to test the value of the ground is to be done.

GENERAL NEWS

PATENTS.

Messrs. Hazard & Townsend, patent attorneys, of 9 Downey block, Los Angeles, furnish us the following list of recent patents of interest to mining men:

March 10, No. 556,092. Process of extracting noble metals from ores. Oscar Frolich, Berlin, Germany, assignor to Siemens & Halske, same place. The process consists in subjecting a lye containing precious metals and also inferior metals, amounting to substantially 5 grains of each metal to the pint, to the action of an electric current of substantially 12 amperes for each two square yards of cathode surface.

March 10, No. 556,089. Ore concentrator, Willis G. Dodd, San Francisco, Cal. A tra-

veling belt is subjected to lateral swinging motion.

March 10, No. 556,187. Ore pulverizer, H. P. Holland, Oakland, Cal. An inclined runway is provided with heavy concave metallic shoes secured to the top thereof, and rotating drums provided with pockets are arranged to throw the ore violently against the shoes.

March 10, No. 556,188. Ore feeder, H. P. Holland, Oakland, Cal. A rotating shaft is provided with shovels arranged to project into the mouth of the chute and feed therefrom the ore to the stamps. The shaft can be swung to gauge the distance the shovels project into the chute.

March 10, No. 555,951. Roasting, smelting and converting plant, H. W. Hixon, Anaconda, Montana. A traveling chain carries trucks through a roasting chamber, and plows are carried by shafts supported by the truck.

March 10, No. 555,961. Furnace for smelting ores. E. E. Lungwitz, Brooklyn, N. Y. The blast furnace is made air tight, and a pressure higher than that at which the volatile metals contained in the ore to be smelted would boil at the temperature of the furnace is maintained in the stack.

March 17, No. 556,466. Crushing mill, F. A. Huntington, Oakland, Cal. A pan is provided with an inclined crushing bed, and inclined wheels travel around such bed; means are arranged to overcome the centrifugal action of the rollers.

March 17, No. 556,690. Process of extracting gold from solutions. G. O. Pearce, Colorado City, Colorado. This consists of recovering gold and platinum from aqueous solutions by passing them through successive layers of vegetable carbon, sulphate of iron, oxalic acid and tartaric acid—arranged as shown, to generate chemical electric reagents and reactions.

March 17, No. 556,457. Process of manufacturing manganese metal. J. W. Cabott, Johnstown, and S. W. Vaughan, Coopersdale, Pa. Slag from Bessemer converters, with coke and limestone in certain proportions, is reduced according to description given.

March 17, No. 556,567. Ore concentrator, J. B. Waring, New York. Consists of a chamber rotating about a vertical axis provided with a cylindric lower portion and acutely inclined smooth portion thereabove, and grooves or ripples above the smooth portion.

March 17, No. 556,691. Method of smelting galena. C. V. Petraeus, Joplin, Mo., assignor to O. H. Pitcher. This consists of treating the ore in an open hearth furnace, saving the lead fume by screening, then subjecting it to further smelting, and treating the metal-bearing slag of the open hearth furnace in admixture therewith in a low cupola furnace, saving the fume in a separate screen system, agglomerating the fume and charging it into the cupola furnace.

Copies of the above patents will be furnished by Hazard & Townsend for 25 cents each. Stamps will be accepted in payment therefore.

The Puget Sound Reduction Works at Everett has added another furnace to its smelting plant, and will hereafter treat copper ores.

The total lead production on the Pacific Coast in 1895 is estimated at 173,000,000 pounds. Three cents was the average price during the year.

The Le Roi mine, Trail Creek, as a result of recent development work, and more especially as a result of prospecting with a diamond drill, has been found to have an ore body which in extent and richness almost passes belief. The ore body at the bottom of the shaft is now opened to a width of fifteen feet, with no walls. There is good reason to believe that it exceeds twenty-five feet, from what their diamond drill discovered. Last year the mine shipped 12,000 tons of ore, the smelter returns showing a value varying from \$10 to \$50 per ton. Since then 5,000 tons more have been shipped, of which the grade was much higher, while ore recently obtained from the bottom of the shaft has given average returns in carload lots ranging from \$250 per ton up to nearly twice that value. The output of the Le Roi since the first of January has exceeded 100 tons a day, and now it is averaging over 125. The miners on the pay roll number 125, and 30 men are also employed in getting out cordwood, etc. A week or two ago, a second dividend of \$50,000 had been declared, and it is confidently predicted by the management that they will have no difficulty in meeting monthly dividends in the same amount from now on. The new smelter, which is expected to blow in next month, has 45,000 tons of \$30 Le Roi rock on hand. From 100,000 to 150,000 tons of ore, 10,000 cords of wood and \$50,000 worth of coke is the stock to be kept on hand continually. The smelter will have a capacity of 250 tons daily to start with.—*British Columbia Mining Record.*

If this comes to the notice of John Peardon, or any one who may know of his whereabouts, formerly employed by the International Smelting company, at El Paso, Texas; last heard from at El Paso in July, '91, please communicate at once with his mother, Mary L. Peardon, Williamston, Pa., or D. C. Stoup, Springdale, Pa. His presence is necessary to act as executor of his father's estate.

VIRGINIA, Nev., March 21.—Supt. Tangerman, chosen by the newly elected directors of the Hale & Norcross Mining Company, who is obnoxious to the miners and citizens, was taken out of a chair in a barbershop this morning by a crowd of miners and citizens, numbering 200, thrown in a wagon and taken to the county line. He was there set at liberty and warned never to return. Sheriff James Quirk, tried to stop the crowd, but all refused to respond to his call for aid. There was no stemming the tide of popular indignation, and the citizens had matters all their own way.

Articles of incorporation of the Pocahontas Gold Mining company were filed for record with the county recorder of Yavapai county, at Prescott, Arizona, March 19th. The company proposes to mine, mill and smelt gold and silver ores in El Dorado county, Calif., and also in such other places as they may deem proper. Their principal office will, however, be in Prescott, Arizona, with branch offices in Placerville and San Francisco, Cal., and a transfer office in the City of New York. The amount of authorized capital stock is \$2,500,000, to be divided into shares of one dollar each. The term of existence will be twenty-five years, from Jan. 13, '96. The incorporators are Henry McCoy and Erastus W. Morgan.

A Union Formed.

The Gold Mining Exchange recently organized in San Francisco has already secured a New York financial rating and been made the correspondent of the big mining stock exchange there. An arrangement has been perfected by which joint stock listings will be made, and the reports of the San Francisco organization on properties within its geographic jurisdiction will be accepted by the New York board. The arrangements noted have been under way for some time, and their satisfactory conclusion means a deal to the new but rapidly growing state board.

London authorities on the movement of bullion estimate that shipments of silver to Asia in 1895 amounted to about £6,000,000, a falling off as compared with recent years. On the other hand, exports to the continent of Europe increased £2,500,000 over the previous year. Mexican dollars have been in good demand all the year in the East and the price has closely followed that of bar silver, with a premium of about 1½ per cent. in favor of the coin. The imports of gold at London were larger, amounting to £36,000,000, including £11,450,000 from the United States (to which, however, £3,275,000 was shipped) £8,250,000 from South Africa and £6,250,000 from Australia, while India and China shipped £3,000,000 to London.

Rock Drilling.

The cost of hand and machine drilling is made the subject of some instructive comparisons in the *Wormlandska Annaler*. It appears that at Danemora, Sweden, mechanical rock drilling costs 50 cents per yard, while hand drilling is only half that amount, so that the single advantage possessed by the former would seem to consist in the greater depth to which the holes may be drilled. At the place named, the mean depth of holes with hand drilling is 2 feet 4 inches in stopes and 2 feet in conversed steps or overhand stopes, while with machine drilling the depths are 5 feet and 3 feet 3 inches, respectively. In the year 1890, with hand drilling, a meter shothole brought down 2.17 tons of rock; in 1892, with machine drilling, four tons, or 3.32 tons, if the subdivision of the rock masses by hand drilling be taken into consideration. Doubling the depth of the hole, therefore, loosened nearly double the quantity of rock, or increased by more than some 50 per cent the mass of subdivided rock. The price paid for hand drilling in Danemora is at the rate of 25 cents per meter.

PERSONAL-NEWS ITEMS

Chas. Pilkey, E. M., has been on a trip to Cochiti, New Mexico.

E. C. Bennett of Mogollon, New Mexico, and manager of the Maud S. mine there, spent a few days in Silver City, New Mexico, last week.

S. H. Elkins has returned from Missouri to Cerrillos, N. M., and will open up several promising properties there.

Messrs. Davis, Rutherford and Newcomb, all of Silver City, New Mexico, passed through Lordsburg, New Mexico, March 16th en route to the Chiricahua Mountains.

Malcolm M. Leish, who has been in Mexico for some time, has returned to Phoenix, Arizona.

Messrs. Hudson & Carr of Silver City, New Mexico, were among the Albuquerque, N. M., visitors last week.

Messrs. Wolfley and Defty have been on a trip through Northern Arizona looking for mines. They returned to Phoenix March 10th.

C. E. Clark, president of the Planet Saturn Mining Company, was in Prescott March 19th.

Arthur N. Gage of Congress, Arizona, was in Phoenix, Arizona, last week.

Messrs. O'Donnell and Downey, from the Huachucas, Arizona, were visitors in Tombstone, Arizona, en route for the new excitement at Pearce.

O. H. Jackson of Lynx Creek, near Prescott, Arizona, was in Phoenix, Arizona, last week.

F. M. Weaver of St. Louis was a caller at the JOURNAL office March 18th.

W. S. Forrest of Pinon Mountain mining district, was in the JOURNAL office March 18th.

R. W. Keeler of the Eagle Cliff mine, Pinon mining district, Riverside county, Cal., was one of the callers at the JOURNAL office March 23d.

H. R. Simpson, general manager of the El Paso Smelting Works at El Paso, Texas, was in Chihuahua, Mexico, ten days ago, looking over the agency his company has there.

Arturo Buttner, connected with the La Fortuna mine, Mexico, spent several days in Monterey, Mexico, last week.

V. H. M. MacLymont, E. M., and interested in the Alice Clark mine, was in Coulterville March 18th.

E. M. Woodbury of Chino was a caller at the JOURNAL office March 26th. He has been on a trip through the mining districts of Southern California.

H. V. Crell, representing the Denver Engineering works of Denver, Colorado, was in the City of Mexico last week.

F. X. Eberle arrived in Silver City, New Mexico, from Los Angeles, Cal., on March 14th, and left for Mogollon immediately.

John Fleming, mine inspector, of New Mexico, was in Albuquerque last week, on his regular tour of inspection.

Shelby M. Collom, formerly of Albuquerque, N. M., is now a resident of Prescott, Arizona.

Col. Bennett, of the Colonial Mining Co., at Mogollon, New Mexico, passed through Silver City, New Mexico, last week, enroute for Denver.

Harvey B. Ferguson, of Albuquerque, New Mexico, has gone to White Oaks, New Mexico, on mining business.

R. M. Carley, from Golden, was in Las Vegas, New Mexico, last week. He reports a rich strike near Golden.

H. M. Merriweather, of Kansas City, was in Prescott, Arizona, March 16th.

G. H. Barnhart, E. M., superintendent of the Collins group of mines in Arizona, has been on a trip to Oregon, on mining business.

John Butler, of Congress, Arizona, was in Phoenix, Arizona, March 17th; he left the same day for Tombstone, Arizona.

John Lawler, of Prescott, and well known in mining circles, has been on a trip to Phoenix.

Wm. Ryan, of Globe, Arizona, has gone to New Jersey, and will be connected with the New Jersey Metal Refining Co., at Elizabeth Port, New Jersey.

L. C. Graupner, the enterprising representative of the Parke & Lucy Co., of San Francisco, was in Los Angeles, March 19th, looking up business for his company.

Chas. M. Little, of New Jersey, was a caller at the JOURNAL office, March 25th. Mr. Little has charge of the sale of a dry washer, which he is willing to run in competition to any in the market.

C. Clay Tarbell, of Taos, New Mexico, has located in Chihuahua, Mexico.

Messrs. Switzer & Owen have returned to the City of Mexico, Mexico, from their trip to Durango.

Messrs. Griffith & Milliken, the former from Pittsburgh and the latter from Morales, Mexico, were in Chihuahua, Mexico, last week.

Mr. J. P. Howe, of Mojave, was a caller at the JOURNAL office, March 24th. Mr. Howe is developing some silver-lead propositions near the 16-mile House, in Kern county.

S. S. Hemenway, representing the big Riddon Iron Works of San Francisco, was in Coulterville, California, March 16th.

Mr. Geo. Thompson, of Elizabeth, New Jersey, and connected with the Oxford Copper Co., of Constable's Hook, New Jersey, was a visitor at the JOURNAL office, March 28th.

The CONSOLIDATED PIPE CO.
OF LOS ANGELES, CAL.

Have about 25,000 feet 75x
Screw Casing
We will offer at cost market prices.

H. L. RYAN,
United States Deputy Mineral Surveyor
Surveys Made for Locations
and Patents
212 New High Street
LOS ANGELES, CAL.

For Sale Cheap
for Cash:

NEW TWO-STAMP QUARTZ
MILL (850-lb stamps)

With 5 H.P. Gas Engine, etc.

Address care of Carrier No. 1 San Bernardino, Cal.

EDWARD S. COBB,
MECHANICAL ENGINEER

Hydraulics, Power, Tests, etc.

100 California Street, Rooms 30 and 31
SAN FRANCISCO, CAL.

ESTABLISHED
1860.

COLORADO IRON WORKS

INCORPORATED
1870.

MANUFACTURERS AND DEALERS OF
Smelting Plants of All Kinds, Concentration, Cyanide and Chlorination Plants.

Stamp Mills,
Cornish Rolls,
Roasting Furnaces,
Hydraulic Sizers,
Etc.

ERIE CITY IRON WORKS
ENGINES AND
BOILERS.



Crushers,
Sampling Mills,
Screens and
Elevators,
Sample Grinders, Etc.

SMITH-VAILE
STEAM PUMPS
For all kinds of service.

Improved form of Crushing Rolls.
Our stock of supplies for Mines, Mills and Smelters is complete and we are prepared
to fill orders on shortest possible notice.
We have an ore testing plant in connection with our works and we test ore in our lots for concentration and amalgamation,
and build mills to successfully treat all classes of ores by latest known methods.

OFFICE AND WORKS, 33D AND WYNKOOP STS., DENVER, COLO.

ASSAYERS AND CHEMISTS

WADE & WADE

Best and Oldest Establishment in Southern California.

109½ Commercial Street, Los Angeles, Cal.

The Willamette Steam Mill Lumbering and Mfg. Co.

Are Prepared to Furnish on Short Notice and at Manufacturer's Prices

Mining and Milling Timbers in Oregon Fir and Cal. Redwood

DELIVERED AT ANY R. R. STATION IN CALIFORNIA, ARIZONA OR NEW MEXICO.

Mills: Portland, Oregon, FT. BRAGG, CAL.

Piling Yards, and Wharf; Redondo Beach, Cal.

Address all Communications to LOS ANGELES, CAL., office, B. F. VREELAND, Agent.



FACTORY:
3101-3139 Blake St., 1742-1746 Champa St., Denver, Col.

THE
Denver Fire Clay Co.

Assayers' and Chemists'
Supplies

MANUFACTURERS OF
Crucibles, Scourifiers & Muffles

And all other kinds of
Fire Clay Material.

SPECIALTIES—Strictly c. p. Acids,
Test Lead, Bone Ash, Cyanide
Potash, Argot, Borax, Borax Glass
Iron Sulphides, Litharge, Soda,
Mining Fluxes, etc.

OFFICE:

WOODBURY CONCENTRATOR



No. 141 First St., San Francisco

READ THE JOURNAL.

ADOLF FRESE

Manufacturer of and Dealer in

Optical, Mathematical, Electrical, Engineering

INSTRUMENTS

We make a specialty of instruments for
Mining Engineering, Magnifying Glasses,
Microscopes, Barometers, Rain-
gauges, etc.

126 SOUTH SPRING ST., LOS ANGELES, CAL.



L. E. AUBURY

Assayer - and - Metallurgist

Mines Examined. Treatment
of Refractory Ores a
Specialty.

CORRESPONDENCE
SOLICITED.

1428 E STREET
SAN DIEGO, CAL.

To Mining Men!

The Only Complete Ore-Testing Mill

And General Assay Office in Southern California is now in full working order
in Los Angeles. Save Time and Freight and Get Better Results from . . .

MORGAN & CO.

WORKS : Llewellyn Iron Works, San Fernando and Magdalena Sts.,

OFFICE : 260-61 Wilson Block, Cor. Spring and First Sts., Los Angeles, Cal.

Geo. E. NOLAN

C. H. BOOTH

The Machinery Supply Co.

105 NORTH BROADWAY,

LOS ANGELES, CAL.

Latest Improved Mining and Milling Machinery, Wire Rope,
Belting, Screens, Etc.

Electrical Motors, Dynamos and Supplies

PACIFIC COAST AGENTS:

Snow Steam Pump Works' Mining and Sinking Pumps.

**THE BI-METALLIC ASSAY OFFICE
AND CHEMICAL LABORATORY.**

Assaying in all its branches. Determinations accurately made.

R. A. PEREZ, Mgr.,

Formerly: Chief Assayer El Paso Smelting Works, El Paso, Tex.
Assistant Chemist Consolidated Kansas City Smelting and
Refining Co., Argentine, Kansas.

(Prompt Returns.)

126 S. MAIN ST., LOS ANGELES, CAL.

Gold Quartz Mines & Prospects

Bogot and Gold as Commodity

F. C. CARBUTT

STIMSON BUILDING, LOS ANGELES, CAL.

**Geo. W. Pennington & Sons,
STEEL WORKS**Manufacturers of
BEST REFINED CUT TOOL STEEL, WIRE
RIB STEEL, IRON AND STEEL
FORGING, ETC

Works, 213 & 220 Folsom St., San Francisco, Cal.

G. WHEATLEY.Mines *
* and Mining

CORRESPONDENCE SOLICITED

TUCSON, ARIZONA

UNION HARDWARE & METAL CO.

DEALERS IN

Boiler Tubes, Iron Pipe and Fittings

RAILROAD, MILLING, MINING and FOUNDRY SUPPLIES

214 and 216 N. Los Angeles Street

Los Angeles, Cal.

Am. Zinc-Lead Smelter

CANON CITY, COLORADO.

NEW MEXICO AND ARIZONA SMELTER

Ivanhoe, Grant Co., N. M.

Will buy all kinds of ores, specially made of copper ores and those containing zinc. Low grade refractory ores desired. Write for prices to either Smelter.

S. E. BRETHERTON, Gen. Supt.

New Mexico and Arizona Smelter.

F. L. BARTLETT, Gen. Mgr.,
Canon City, Colorado**THE WILSON**
High Grade Steel
Shoes and DiesGuaranteed to Wear Longer and Prove Cheaper than any others.
Made by use of Special Appliances. Patented Aug. 16th, 1892.

— Made only by —

WESTERN FORGE AND ROLLING MILLS,
St. Louis, Missouri**JOSHUA HENDY MACHINE WORKS**
SOLE AGENTS

38 to 44 Fremont Street, San Francisco, Cal.

**JOHN WIGMORE,
Heavy Hardware.**

Agents for JOHN A. ROEBLING'S SONS CO. Wire Rope.

Mining Supplies**Iron and Steel**

117 SO. LOS ANGELES ST., LOS ANGELES, CAL.

WM. T. SMITH & CO.**GOLD AND SILVER REFINERS AND ASSAYERS**

Highest cash price for old gold and silver, placer and retort gold: we will make returns in Southern California, Arizona, New Mexico from 4 to 6 days quicker than from any other point.

128 N. MAIN ST., Room 10.

LOS ANGELES, CAL.

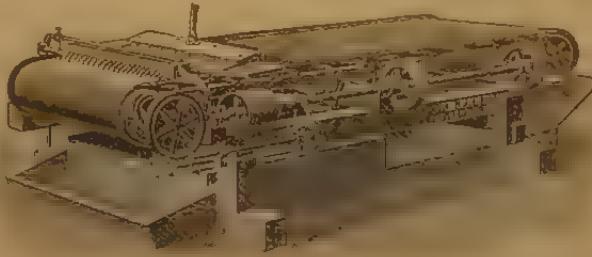
Harper & Reynolds Co.,**MINING SUPPLIES**

— AGENTS FOR —

**Giant Powder Co., Galvanized Spiral Pipe,
Steel and Iron.**152-154 North Main Street, } LOS ANGELES, CAL
151-153 North Los Angeles Street, }**FRUE ORE CONCENTRATOR**

Over 4,200 in Actual Use

Manufactured under Patents of April 27, 1890; Sept. 18, 1891; July 24, 1891; and March 31, 1891



It can be safely stated, without going into a description of several new and untried concentrators that have lately come into the market, that where sulphurites are of such value as to make classifying necessary, the Frue Vanner is always used, and is the only endless belt concentrator in the market that can be relied on to handle all classes of ores, and give universal satisfaction. (In all competition of concentrators the Frue Vanner is taken as the standard machine of the world, and all comparisons made by it. There have been over 4,200 of these machines sold, 1700 having been sold on the Pacific Coast alone.) They are in use in every part of the world where mining is carried on, and in all cases they are giving perfect satisfaction. From time to time valuable and important improvements have been made in this machine to increase its capacity, and durability, and particular attention has been given to the Patent Lip Flange for the rubber belt, which does away with nearly all the strain and wear, as in the old style of flange, making the life of belt more than double that of other style belts in the market. The lip of flange bends outward in going over the large end rolls, thereby distributing the strain in the solid rubber, and bringing virtually no strain either at the edge or at the base of flange, as is the case in all belts with a raised edge.

Price of 4-foot wide Plain Belt Frue Vanner	5500 f. o. b.
Improved Belt Frue Vanner	6000 f. o. b.
6-foot wide Plain Belt	6900 f. o. b.

For any information, pamphlets, circulars or testimonials, call on or address

JAS. S. BROWNELL, Western Agent FRUE VANNING MACHINE CO.

Successor to ADAMS & CARTER

132 Market Street,

San Francisco

W. H. Taylor

H. G. Ward

Nevada Metallurgical Works

No. 71 and 73 Stevenson Street,

San Francisco

C. A. LUKEHARDT, Manager. Established 1860

Ores worked by any process, ores sampled, Assaying in all its branches, Assays of Ores Minerals, Waters, Etc.

C. A. LUKEHARDT & CO. Formerly Biotics & Lukehardt, Mining Engineers and Metallurgists.

School of Practical, Civil, Mechanical,

Electrical and Mining Engineering

Surveying, Architecture, Drawing and Assaying

723 MARKET ST SAN FRANCISCO, CAL.

OPEN ALL YEAR

A. VAN DER NAILLEN, President.

Assaying of Ores, \$25; Bullion and Chlorination Assay, \$25. Microscope Assay \$10. Full Course of Assaying, \$50. Established 1864.

Send for Circular.

THE SOUTHERN CALIFORNIA LUMBER CO.

WHOLESALE —

PUGET SOUND PINE AND REDWOOD LUMBERDelivered at any R. R. point in New Mexico, Arizona or California
FIRST-CLASS MATERIAL

LOW PRICES

PROMPT DELIVERY

Wharves and Yards, E. SAN PEDRO, CAL.

Address General Offices, LOS ANGELES, CAL., CHAS. WIER, Mgr.

We make a specialty of Mining Trade

CONCENTRATION MACHINERY Silver-Lead Mines

Walburn-Swenson Company,

COMPLETE PLANTS for the CONCENTRATION of ORES!

Coal Washing Plants Furnace Castings, Mining Machinery, Experimental Plant for Testing Ores by Concentration.

144 Monadnock Block.

CHICAGO, ILL.

PATENTS!

HAZARD & TOWNSEND
SOLICITORS
OF PATENTS

Patents on Inventions secured in all countries. Copyrights, Trade Marks and Labels, Office, 9, Downey Block.

Telephone 347. Los Angeles, Cal.

GOLD

— AT —

CRIPPLE CREEK.

The heart of the Mining District is reached by the Midland Terminal Railway, which is the direct connection of the

Atlantic and Pacific Railroad
Southern California Railway

Through Palace Sleeping Cars and Through
Tourist Sleeping Cars run every day from
both San Francisco and Los Angeles to
Junta, Colorado, where immediate connec-
tion is made for the

GOLD DISTRICT

Through Tickets and Sleeping Car Reservations
can be obtained at the Ticket Office of
the Santa Fe Route

634 Market St., San Francisco
129 N. Spring St., Los Angeles

FIRST-CLASS PRINTING LOWEST PRICES.

We have a well-equipped power printing plant, capable of all classes of work from an ordinary handbill to a fine half-tone pamphlet.

Certificates of stock for mining and other corporations executed in first-class style.

Our rates are low and we request the favor of a trial order.

Orders by mail solicited and given prompt and careful attention.

Address:

Commercial Printing House,

139 SOUTH BROADWAY,
TEL. 311. LOS ANGELES, CAL.

ADAMS BROS.
DENTISTS

2394 S. Spring St. Los Angeles, Cal.
Bet. 2d and 3d. Estab. in the city 10 years
Sets of Teeth from \$6 to \$10. All work Guaranteed

U.S. HOTEL

LOS ANGELES, CAL.

170 N. Main St.
MINERS HEADQUARTERS
Rooms from 50c up.

DENVER PUBLIC SAMPLING WORKS CO.



GREATEST ORE MARKET
IN THE WORLD.
GOLD, SILVER, COPPER
AND LEAD ORES
SAMPLED AND SOLD
TO HIGHEST BIDDER.
DENVER, COLO.

GEN'L MEXICAN AGENCY

Special and prompt attention given to business of every kind with the various Departments of the Government. Concessions arranged. Patents Procured, Titles examined, Reports made on Mining, Coffee, Sugar, Tobacco and other properties, also on the financial standing of firms and individuals. Custom House business attended to, and consignments received. First-class staff of assistants.

C. H. M. y Agramonte

P. O. Box 388. 17 Cinco de Mayo
Cable address "Agra"

CITY OF MEXICO—MEXICO

EASTERN PRICES BEATEN Save Commissions by ordering direct from

S. F. Pioneer Screen Works.

JOHN W. QUICK, Prop.

IMPROVED FACILITIES. FINEST WORK. LOWEST
PRICES! Perforated Sheet Metal, Steel,

Riveted Iron, American Planchis,

Zinc, Copper and Brass Screens for all uses.

MINING SCREENS A SPECIALTY.—

221 and 223 First Street, San Francisco, Cal.

METAL MARKET.

New York Quotations:

	SILVER	COPPER	LEAD
MAR 16	\$6	31.00	3.00
" 17	6.50	31.00	3.00
" 18	6.50	31.00	3.00
" 19	6.50	31.00	3.00
" 20	6.50	31.00	3.00
" 21	6.50	31.00	3.00
" 22	6.50	31.00	3.00
" 23	6.50	31.00	3.00
" 24	6.50	31.00	3.00
" 25	6.50	31.00	3.00
" 26	6.50	31.00	3.00
" 27	6.50	31.00	3.00
" 28	6.50	31.00	3.00
" 29	6.50	31.00	3.00
" 30	6.50	31.00	3.00
" 31	6.50	31.00	3.00

Note—The above Mexican stocks are figured
on the basis of Mexican silver

MINING STOCK QUOTATIONS.

	1.00	Franklin	15.00
Allerton	1.00	Kearnsarge	12.00
Atlanta	18.00	Osceola	26.00
Boston & Moira	77.00	Quincy	125.00
Buite & Boston	23.00	Tamarack	114.00
Cal & Helca	305.00	Wolverine	8.75
Centennial	2.00		

COLORADO SPRINGS STOCKS

	59	Mollie Gibson	59
Anaconda	69	Matao	18
Blue Bell	65	Mount Rosa	16
Colfax	65	Ophir	10
Colorado	65	Orpha Bell	13
Fanny Rawlins	65	Pharmacist	15
Gold King	62	Summit	25
Gold and Globe	62	Work	16
Isabella	62	World	22
Jack Pot	62		
Jefferson	62	Del Monte	35
Monarch	62		

DENVER STOCK REPORT

	59	Anaconda	59
Atomo	65	Aola	65
Amity per M	1	Big Six	17
Barkers	8	Boston & Id	65
Croesus	65	Colfax	65
C. C. Con	17	Chimbarano	65
C. A. C.	65	Gold & Globe	20
Goldfield	1.65	Mollie Gibson	55
Gold Standard	65	Mt. Rosa	16
Isabella	65	Pharmacist	16
		Union Gold	40

HELENA, MONTANA

	25	Anaconda	2.00
Alice	25	Aola	1.50
Bald Butte	3.65	Big Six	1.50
Benton Group	10	Boston & Id	46
Bi-Metallic	3.60	Colfax	1.00
Elizabeth	10	Iron Mountain	40
		Ontario	1.00
		Poorman	40

NEW YORK

	65	Sierra Nevada	65
Crown Point	35	Standard	2.75
Con. Cal & Va.	40	Union Col	40
Gould & Curry	40	Iron Silver	10
Hale & Norcross	25	Quicksilver	3.00
Homestake	60	Mercur	60
Mexican	60	New Tintic	2.00
Ontario	11	Niagara	2.25
Ophir	1.60	No. Kneek	.05
Plymouth	20	Yellow Jacket	35
		Deadwood	45

SAN FRANCISCO

	15	Mono	15
Alta	12	Nevada Queen	1.50
Belcher	24	Ophir	1.25
Best & Belcher	75	Potosi	
Bodie Con	35	Savage	1.25
Chollar	40	Sierra Nevada	65
Con. Cal. & Va	1.60	Union Con	65
Crown Point	35	Utah	10
Hale & Norcross	25	Wolver	12
Mexican	45		
Gould & Curry	35		

ST. LOUIS.

	20	Elizabeth	20
American Nettle	25	Leo	3
Gratuit Mt.	2.60	Hope	1.40
Adams	60		
Bimetallic	3.30	Small Hopes	70

SALT LAKE CITY

	12	Rocky Hill	12.00
Alliance	70	Horn Silver	1.75
Am. Nat. G's	15	Little Pittsburg	
Anchor	2.25	Lucky Bill	25
Appes	.07	Mammoth	2.15
Bugas	.25	Meekas	60
Bull Beck	6.50	Mercur	7.55
Cane Springs	60	New Tintic	2.00
Cent Bunka	65.00	Niagara	2.25
Cleve. Con.	45	No. Kneek	.05
Comstock	16	North Spy	2.40
Crescent	.04	Ontario	12.00
Dalton	.60	Silver King	14.25
Daly	7.60	Silver Spar	1.00
Daly West	8.75	Telluride	1.00
Rika	20		

MEXICO

Name of Company	Rate
Angostura	6.50
Asturina y Anexas	1.20
Cerro Colorado	7.00
Concepcion y Anexas	8.00
El Oro	1.00
do pre	1.00
Luisa de Borda	2.00
do Free stock	2.00
Luisa de Maravillas	2.00
Real del Monte	2.00
Rosario y Anexas	1.00
do pre	1.00
San Rafael del Oro	2.00
Sta. Celia y Anexas	1.00
do Free Stock	1.00
Tlaxingo	1.00
Zonelina	1.00
Zona M. de Jocas	1.00

Note—The above Mexican stocks are figured on the basis of Mexican silver



PUMPS
AND
Irrigating Machinery.

Keystone Foundry and Machine Works,
College Street, near Alameda.

ALFRED COOPER,
Attorney and Counselor at Law
81 and 83 TEMPLE BLOCK,
LOS ANGELES, CAL.

REPRESENT LEADING PROPERTIES

Surveys and examinations made and
reports furnished by the most
competent experts

Correspondence

Solicited Information promptly
Address Furnished

J. C. O'BANNON,
Durango, Mexico

ANGELS IRON WORKS
DEWAR & FULLER, Pres.

Mining Machinery.

WATER & GAS PIPE
Water & Gas Meters, Gas Meters, Mining
and Industrial Pipe

W. H. ADAMS
Mining Engineer

13 Wall St., New York, or Mineral City, Va.
Reports and Examinations on Mining Property.
Spence Furnace for Roasting, Chloridizing, etc.

NOTICE!

General merchandise, mining supplies, machinery, information about smelters wanted. Anyone desiring information relating to the purchase of general merchandise, mining supplies, machinery or seeking information about smelters can apply to THE JOURNAL and reliable information will be furnished, together with catalogues and discounts of all mining supplies and machinery.



Quartz Screens
A specialty. Round, slot
or slotted slot holes
Iron, Carbon Iron, Iron
Homogeneous Steel, Carbon
Steel or American iron
Steel, Iron, Zinc, Copper
B. B. S. Screen Jewelers, CALIFORNIA
Patent in Screen Jewelers, CALIFORNIA
Patent in Screen Jewelers, CALIFORNIA

R. E. BURLINGAME'S
ASSAY OFFICE *Chemical Laboratory*

Established in Colorado, 1866. Samples by mail or express will receive prompt and careful attention. Gold and Silver Bullion refined, melted and assayed, or purchased.

Address 1736 and 1738 Lawrence St., Denver, Col.

Cheap ACIDS! Cheap

Sulphuric, Muriatic, Nitric.

STAUFFER CHEMICAL CO.

Largest Works in the West

Manufacturers also of

SULPHUR

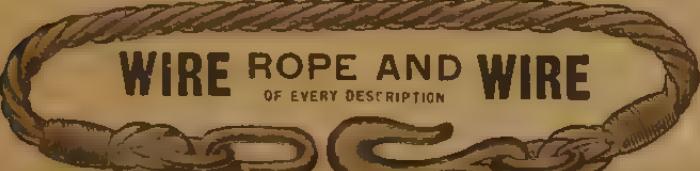
Powdered Sublimed Roll and Wicks

Sul Soda, Soda Ash, Whiting, Paris
White, Carbon Bisulphide and
Soldering Fluid.

Address:

402 Front street, San Francisco.

WASHBURN & MOEN MFG. CO.



PACIFIC WORKS

SAN FRANCISCO

ELMORE HAND ROCK DRILL COMPANY

PLANS AND ESTIMATES FURNISHED FOR ALL KINDS OF

Mining Machinery *and*
Ore Reduction Works

25 QUINCY STREET,

CHICAGO, ILL.

JOHN P. CULVER, Civil Engineer.

JOHN P. CULVER & COMPANY,
ASSAYERS, MINERALOGISTS and MINING ENGINEERS,
145 South Broadway, LOS ANGELES, CAL.

EDGAR T. LOY,
HAS FOR SALE A LARGE LIST OF

Good Mining Properties in Southern California and Nevada
And Elsewhere in the Southwest

None but reliable experts employed
to make examinations

338 SOUTH BROADWAY,

LOS ANGELES, CAL.

A. A. BAILEY

MANUFACTURER AND DEALER OF THE LEADING

Packings and Engineers Supplies

LUBRICATING OILS AND COMPOUNDS

Exclusive Manufacturer of the UNSURPASSED

BAILEY

Anti-Friction Metal and all other Grades of Babbitt Metal

Sole Agents for Reliable Steam Pumps

300 South Los Angeles Street, Los Angeles, Cal.

C. W. KEMPTON

Mining Engineer ..

Oro Blanco, Arizona

20 years experience in exploration, mining and
millling. 10 years as superintendent and manager
Boston, New York, and Chicago references.

Miners will find the ore tariffs
on page 18 reliable. We have
special arrangements with the dif-
ferent railroads to receive any
changes as soon as made.

John Taylor & Co.

53 First St., San Francisco, Cal.

Established in 1852. Manufacturers and
Importers of

**ASSAYERS', MINE
MILL SUPPLIES,**

CHEMICALS AND
CHEMICAL APPARATUS

Sole Agents for the Pacific Coast for the W. S.
TYLER WIRE WORKS CO.,
manufacturers of

STEEL & BRASS WIRE

Battery Screens.

We frequently have on hand second
hand Assay and Ballion Balances which
we carefully re-adjust and in most
cases are practically as good as new,
and sold at less price.

Send for Catalogue and Assay Table.

NOTICE TO
ORE SHIPPERS!

BY SHIPPING YOUR ORES

to us you can obtain the highest price paid
on competitive lots in the mining market,
together with a certain and accurate estimate
of what your ore is worth. We are
able to give perfect satisfaction to miners.
Write for our Pocket Reference Book.
The highest cash price paid for gold bullion and
old gold. Premium returns.

The State Ore Sampling Co.
DENVER COLO

HOFF ASBESTOS MFG CO.
EL SINORE, CALIFORNIA,

Asbestos Steam Pipe Covering.
Sectional and Cement.

Asbestos Assay and Smelting Furnace
Cement, delivered anywhere, stands
6,000°, used in place of Fire Brick,
Only material that Stands Constant
Crude Oil Blasts.

Asbestos Fire Proof White Wash,
Asbestos Roof Paint,
Asbestos Stove Backs.

Agents Wanted

PROFIT BY THE EXPERIENCE OF OTHERS!

It will pay you to write to us for Descriptive Circular and Testimonials from Miners, using our

P. & B. READY ROOFING
WATER AND ACID-PROOF PAINTS.

PARAFFINE PAINT CO. 111 SOUTH BROADWAY,
Los Angeles, Cal.

The Puget Sound Reduction Company
PURCHASERS OF

GOLD, SILVER, LEAD AND COPPER ORES

Special Facilities for Handling ores from the South-West and Mexico
EVERETT, - - - - - WASHINGTON

The Blasdel Concentrating Belt Co.

OWING to improved machinery we are now able to sell our NW IMPROVED CONCENTRA-
TING BELTS for the "Triumph" or Irene Vanners at reduced prices; also our Improved Belts
six feet in width. Practical mill men must see at a glance the advantage of our belts over any other.

First, the flanges stand at an acute
angle toward the center, therefore
readily conform to the change of
direction while passing over the end
flanges. Thus, the vexation and loss
incurred by constantly breaking off
the flanges, as in the case with the
old style, is practically overcome.

Again, in the surface of the belt
transversely, two feet apart, there is
space of one inch, containing twenty
rifles 1-32 of an inch in depth. This
tends to equalize the pulp and pre-
vents it from banking on the edges, or
forming channels. This rifle leaves
fine sulphurates and quicksilver that
would escape with the tailings from a
belt with an entirely smooth surface.

We manufacture smooth belts with
our Improved Flanges to order. Send
for references.

H. G. BLASDEL, JR., Mgr.
419 California Street, San Francisco



Mining Machinery For Sale!

Two 50 Horse Power Boilers.
Two 50 Horse Power Boilers.
One 16"x42" Hamilton Corliss Engine.
One 10"x24" Atlas Engine.
One 12"x20" Double Cylinder Hoisting Engine, Drum 4"x6", 900 feet
Wire Cable, 6 foot Shrine Cage, 2
Bucketts

One Friction Hoister to be run by
belt, capable of hoisting 1000 feet.
Two No. 8 Stillwell Water Heaters.
One Cornish Pumping Plant, Ten
Foot Stroke.
One No. 9 Cameron Steam Pump.

This Machinery is nearly new, is in First-Class Condition, and will be
Sold Cheap for Cash. For further information
Apply to

W. E. DAME, - Cerrillos, N. M.

To Gold Miners!

Silver Plated Copper AMALGAM PLATES
For Saving Gold.

GOLD REMOVED FROM OLD PLATES AND REPLATED
Old Plates Bought. Get our Reduced Rates. Thousands
of orders filled. Twenty six Medals Awarded.

San Francisco

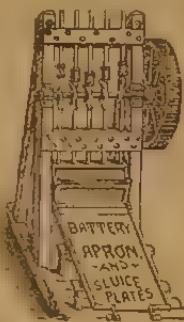
GOLD, SILVER and NICKLE Plating Works

683 and 685 Mission Street, San Francisco, Cal.

Telephone, Main 5931.

E. G. DENNISTON,

Proprietor
Every description of work plated. Send for Circular.



FULTON ENGINEERING AND SHIPBUILDING WORKS

MINING AND MILLING MACHINERY

Adapted to every description of Mining and Milling.

Office and Branch Works,

213 First Street, San Francisco, Cal.

'VALVE-OLEINE'

675 DEGREES
FIRE TEST.

Master Mechanics, Purchasing Agents, Engineers and Pract. Builders of costly Steam Plants and Locomotives, etc., will be pleased to know that E. H. Green & Co. now produce a such extraordinary high fire test as to make proof against the great heat to which they are subjected as is therefore a perfect lubricator where products of lower grade in fire test pass off at once, leaving no parts subject to wear, or greatly increasing the consumption of oil.

'VALVE-OLEINE' is a product in the highest state of filtration, it is of the greatest viscosity, entirely free from all acids and absolutely non corrosive, and without doubt the best and most thorough lubricant CIVILIAN Lubricant now on the market, and will naturally lubricate 200 to 300 per cent, more than products of lower tests. It is now over the Best and the Most Economical Lubricant. Manufacture and sale controlled exclusively by

THE RELIANCE OIL AND GREASE CO.,

Agents Wanted Everywhere. Write for full particulars CLEVELAND, OHIO, U. S. A. and our new Catalogue of large line of products. Samples free. Send st. stamp for copy "Gems of Art." — Price on application direct from machinery users

SAVILLE, MACLYMONT & Co.

Mining and Consulting Engineers and Metallurgists.

Examine and report on mines, ore bodies, and all metallurgical processes connected therewith. Have Complete Stamp Mill and Concentrating Plant, Practical Mill-Tests, Assays, and Analyses of Ores, and General Analytical Work, undertaken at the

California Metallurgical Works, 10 Anno Street, San Francisco. Reference to leading mining men furnished on application. (Opposite Palace Hotel)

MERRALLS'

HYDRAULIC * QUARTZ * MILL.

The only Mill
in the world for reducing hard and
tough ores cheaply,
either wet or dry.
Guaranteed super-
ior to Stamps; less
power required,
very much less
wear and tear, and
a much higher per-
cent. of gold saved.
Other so-called
Quartz Mills are
positively "not in n-
it."

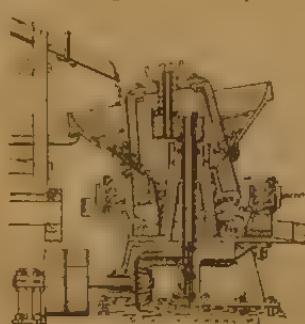


In operation daily. Custom Mill. Send us your ores. Call, or address,

MERRALLS MILL CO.,

45 and 47 Fremont Street, San Francisco, Cal.

The Lightner Quartz Mill Something Good and Cheap



MANUFACTURED BY

WM. H. BIRCH & CO.,

Also Manufacturers of
Steam Pumps, All Kinds of Mining Machinery
Boilers, Engines, Ore Buckets, Ore Cars,
Cages, Hoists, etc.

Send for Price-list to

W. HOSKINS,

Room 51

81 SOUTH CLARK ST., - CHICAGO, ILL.

129-133-135 1st St., San Francisco, Cal.

INCORPORATED MINES PAYING DIVIDENDS.

NAMES OF MINES	LOCATION	No. of Shares	Capital Stock	Par Value	Amount of last Dividend	Date of Last Dividend	Total Amount Paid in Dividends	Kind of Mineral Produced
Adams	Colorado	150,000	\$ 1,500,000	\$ 10	\$ 0 04	October 1895	\$ 693,500	S, L, G.
Alaska, Treadwell	Alaska	200,000	5,000,000	25	37½	April 1895	2,224,000	G.
American & Nettie	Colorado	300,000	.....	.....	05	March 1892	175,000	G, S.
Aspen Mining and Smelting Co.	Colorado	200,000	2,000,000	10	10	July 1894	900,000	S, L.
Bald Butte	Montana	250,000	250,000	1	05	January 1895	382,000	S, G.
Bangkok-C-Bell	Colorado	600,000	600,000	1	00½	November 1895	101,510	S. L. C.
Bellevue	Idaho	125,000	1,250,000	10	10	January 1890	200,000	S, L.
Bodie Consolidated	California	100,000	10,000,000	100	25	December 1894	1,677,572	G.
Boston & Montana	Montana	125,000	3,125,000	25	5 00	November 1895	3,025,000	C, S.
Caledonia	Dakota	100,000	10,000,000	100	08	October 1890	192,000	G.
Calumet & Hecla	Michigan	100,000	2,500,000	25	5 00	December 1895	44,350,000	C.
Centennial Eureka	Utah	30,000	1,500,000	50	1 00	November 1895	1,410,000	S, L.
Champion	California	3,400	34,000	10	10	August 1895	216,900	G.
Cow D'Alene	Idaho	500,000	5,000,000	10	98	June 1893	340,000	S, L.
Colorado Central	Colorado	275,000	2,750,000	10	05	April 1893	502,661	S, L.
Commonwealth	Nevada	100,000	10,000,000	100	20	November 1890	20,000	S.
Consolidated, California and Virginia	Nevada	216,000	21,600,000	100	25	March 1895	3,952,800	S, G.
Copti	Nevada	100,000	10,000,000	100	01	Feb. 1895	68,000	.....
Copper Queen Consolidated	Arizona	200,000	2,000,000	10	25	June 1895	1,910,000	C.
Daly	Utah	150,000	3,000,000	20	25	May 1893	2,850,000	S, L.
Deadwood Terra	Dakota	200,000	5,000,000	25	05	September 1892	1,140,000	G.
De Lamar	Idaho	400,000	2,000,000	5	24	October 1895	1,722,000	G, S.
Durbec B Gravel	California	100,000	10,000,000	100	05	March 1894	265,000	G.
Dexter	Nevada	100,000	1,000,000	10	25	July 1893	145,000	G, S.
Elkhorn	Montana	200,000	1,000,000	5	12½	May 1895	1,321,176	S.
Elkton	Colorado	500,000	500,000	1	01	December 1894	60,000	G, S.
Enterprise	Colorado	500,000	2,500,000	5	25	June 1893	850,000	S.
Eureka Consolidated	Nevada	50,000	1,000,000	100	25	January 1892	5,112,500	S, G, I., C.
Franklin	Michigan	40,000	1,000,000	25	2 00	January 1894	1,240,000	C.
Golden Reward	South Dakota	250,000	1,250,000	5	05	July 1894	100,000	G.
Gold and Globe	Colorado	750,000	750,000	1	00½	March 1895	9,375	G.
Granite Mountain	Montana	400,000	10,000,000	25	20	July 1892	12,120,000	S.
Great Western	California	50,000	5,000,000	100	25	November 1893	388,366	Q.
Hecla Consolidated	Montana	30,000	1,500,000	50	50	August 1895	2,115,000	S, G, I., C.
Helena & Frisco	Idaho	500,000	2,500,000	5	02	July 1891	170,000	S, I.
Helena & Victor	Montana	200,000	1,000,000	5	25	May 1892	80,000	G, S.
Holmes	Nevada	100,000	10,000,000	100	25	April 1892	75,000	S.
Homestake	Dakota	125,000	12,500,000	100	25	December 1895	5,712,500	G.
Hope	Montana	100,000	1,000,000	10	10	January 1895	594,250	S.
Horn Silver	Utah	400,000	10,000,000	25	12½	April 1895	5,137,500	S, L.
Idaho	California	3,100	310,000	100	2 50	September 1893	5,489,000	G.
Iron Mountain	Montana	500,000	5,000,000	10	02	November 1895	395,000	S.
Jackson	Nevada	50,000	5,000,000	100	14	Feb. 1895	80,000	G, S.
Kearnsargo	Michigan	40,000	1,000,000	25	1 00	Dec. 1895	120,000	C.
Kennedy	California	100,000	10,000,000	100	48	August 1895	2,734,000	G.
Leadville Consolidated	Colorado	40,000	4,000,000	10	03	February 1893	316,000	S, L.
Lexington	Montana	40,000	4,000,000	100	90	July 1893	652,200	G, S.
Maid of Erin	Colorado	600,000	3,000,000	5	25	April 1893	708,900	S, L.
Mayflower	California	60,000	1,200,000	20	10	August 1895	242,000	G.
Minnesota	Minnesota	165,000	16,500,000	100	1 50	April 1893	2,745,000	I.
Mollie Gibson	Colorado	1,000,000	5,000,000	5	06	January 1895	4,080,000	S.
Montana Lt.	Montana	660,000	8,300,000	5	12½	January 1895	2,701,575	G, S.
Moose	Colorado	600,000	600,000	1	02	November 1894	72,000	S.
Morning Star	California	2,400	240,000	100	7 00	October 1895	446,400	G.
Moulton	Montana	400,000	2,000,000	5	06	February 1894	460,000	S, G.
Mt. Diablo	Nevada	50,000	5,000,000	100	30	November 1893	225,000	S.
Mt. Rosa	Colorado	1,000,000	1,000,000	1	10	Jan. 1895	10,000	G.
Napa	California	100,000	700,000	7	20	October 1895	740,000	Q.
New Guston	Colorado	110,000	550,000	5	75	April 1892	1,877,500	S.
North Banner Consolidated	California	100,000	1,000,000	10	05	July 1891	20,000	G.
North Star	California	100,000	1,000,000	10	50	June 1893	450,000	G.
Nugget	Colorado	1,000,000	1,000,000	1	00½	Jan. 1895	10,000	G.
Omaha Consolidated	California	24,000	2,400,000	100	15	July 1894	97,200	G.
Ontario	Utah	150,000	15,000,000	100	50	October 1892	13,175,000	S, L.
Osceola	Michigan	60,000	1,250,000	25	1 00	June 1895	1,940,500	C.
Pacific Coast	California	15,000	1,500,000	100	1 00	July 1893	422,500	.....
Parrot	Montana	180,000	1,800,000	10	10	June 1893	1,569,000	C.
Plumas Eureka	California	140,600	1,406,000	10	18	October 1893	2,686,295	G.
Poorman	Idaho	300,000	3,750,000	125	15	September 1892	68,260	G, S.
Portland	Colorado	3,000,000	3,000,000	1	02	November 1895	868,000	G, S.
Quicksilver Pref.	California	43,000	4,300,000	100	1 25	June 1891	1,823,911	Q.
Quincy	Michigan	50,000	1,250,000	25	4 00	August 1895	7,600,000	C.
Red Cloud	Idaho	200,000	1,000,000	5	10	December 1892	153,000	S, L.
Rialto	Colorado	300,000	300,000	1	01	April 1892	80,250	G.
Richmond	Nevada	54,000	1,350,000	25	25	September 1893	4,388,780	S, L.
Rico Aspen	Colorado	1,600,000	5,000,000	5	02	November 1894	325,000	S.
Sierra Buttes	California	222,500	2,225,000	10	12	October 1893	1,559,933	G.
Silver, Mg.	New Mexico	500,000	500,000	1	4 05	December 1891	300,000	S.
Small Hopes Consolidated	Colorado	250,000	5,000,000	20	10	October 1893	3,225,000	S.
Standard	California	100,000	10,000,000	100	10	June 1895	3,771,159	G, S.
Swansea	Colorado	60,000	600,000	10	10	September 1893	39,000	G, S.
Tamarack	Michigan	50,000	1,250,000	25	4 00	December 1895	4,070,000	G.
Trinity River	Colorado	500,000	500,000	1	.....	April 1894	37,500	G.
Union	Colorado	1,250,000	1,250,000	1	1 00	May 1895	27,740	S.
United Verde	Arizona	300,000	3,000,000	10	25	December 1893	562,500	C.
Victor	Colorado	200,000	1,000,000	5	10	December 1895	455,000	G.
Yankee Girl	Colorado	260,000	1,300,000	5	25	July 1891	620,000	S.

S, Silver.

G, Gold.

L, Lead.

C, Copper.

Q, Quicksilver.

I, Iron.

THE MINING AND METALLURGICAL JOURNAL.

ORE TARIFF.

From Points in Mexico, New Mexico, Texas and Arizona, to El Paso, Pueblo, Denver and Kansas City.

ATCHISON, TOPEKA & SANTA FE R. R.

FROM	TO	Car Loads, in dollars and cents per ton of 2,000 lbs.			
		Ore & Concentrates.	Lead Bullion, valuation not to exceed \$100 per ton.	Base Metal, Copper Matte, Bar and Black Copper, valuation not to exceed \$300 per ton.	Lead Bullion, valuation not to exceed \$100 per ton.
Guaymas, Mex.	El Paso	10.00	11.50	13.50	
	Pueblo	13.50	16.00	17.00	
	Denver	15.00	16.00	19.00	
	Kansas City	15.50	17.00	19.00	
Critis	El Paso	8.50	11.00	13.00	
	Pueblo	12.50	14.00	16.00	
	Denver	14.00	15.50	17.50	
	Kansas City	14.50	16.00	18.00	
Turres	El Paso	8.00	10.50	12.50	
	Pueblo	11.50	13.00	15.00	
	Denver	13.00	14.00	18.50	
	Kansas City	13.50	15.00	17.00	
Hermosillo	El Paso	8.50	10.00	12.00	
	Pueblo	10.00	11.50	13.50	
	Denver	11.50	12.00	15.00	
	Kansas City	12.00	13.50	15.50	
Pasqueira	El Paso	8.00	8.50	11.50	
	Pueblo	10.00	11.50	13.50	
	Denver	11.50	12.00	15.00	
	Kansas City	12.00	13.50	15.00	
Querobabi	El Paso	7.00	8.50	10.50	
Santa Ana	Pueblo	10.00	11.50	13.50	
	Denver	11.50	13.00	15.00	
	Kansas City	11.50	13.00	15.00	
Magdalena	El Paso	6.50	8.00	10.00	
	Pueblo	9.50	11.00	13.00	
	Denver	11.00	12.00	14.00	
	Kansas City	11.50	13.00	15.00	
Imuris	El Paso	6.00	7.50	9.50	
	Pueblo	9.50	11.00	13.00	
	Denver	11.00	12.00	14.50	
	Kansas City	11.50	13.00	15.00	
Nogales A.T.	El Paso	5.50	6.50	8.50	
	Pueblo	9.00	10.50	12.50	15.20
	Denver	10.50	12.00	14.00	17.20
	Kansas City	11.00	12.50	14.50	21.45
Calabasas	El Paso	5.50	6.50	8.50	
	Pueblo	8.50	10.00	12.00	15.20
	Denver	10.00	11.50	13.50	18.40
	Kansas City	10.50	12.00	14.00	21.30
Sanford	El Paso	5.50	6.50	8.50	
	Pueblo	8.50	9.50	11.50	15.00
	Denver	10.00	11.50	13.50	21.20
Crittenden	El Paso	4.70	5.70	7.70	
	Pueblo	8.00	9.50	11.50	14.80
	Denver	9.50	11.00	13.00	16.00
	Kansas City	10.00	11.50	13.50	18.00
Fairbank	El Paso	4.40	5.40	6.50	
	Pueblo	8.00	9.50	11.50	14.00
	Denver	9.50	11.00	13.00	16.20
	Kansas City	10.00	11.50	13.50	21.20
Fucson	El Paso	4.35	5.30	6.50	
	Pueblo	8.00	9.50	11.50	14.00
	Denver	10.50	12.00	14.00	16.80
	Kansas City	11.00	12.50	14.50	20.85
Benson	El Paso	4.00	5.00	6.00	
	Pueblo	8.50	10.00	12.00	13.50
	Denver	9.50	11.00	13.00	17.20
	Kansas City	10.00	11.50	13.50	20.15
Steins Pass, N.M.	El Paso	4.35	5.30	6.50	
	Pueblo	8.00	9.50	11.50	14.00
	Denver	10.50	12.00	14.00	16.80
	Kansas City	11.00	12.50	14.50	20.85
Lordsburg	El Paso	4.35	5.30	6.50	
	Pueblo	8.00	9.50	11.50	14.00
	Denver	9.50	11.00	13.00	16.80
	Kansas City	10.00	11.50	13.50	20.75
Silver City	El Paso	2.80	3.20	4.70	
	Pueblo	6.50	8.00	10.00	11.20
	Denver	8.00	9.50	11.50	12.20
	Kansas City	8.50	10.00	12.00	17.40
Hudson	El Paso	2.40	3.00	4.50	
	Pueblo	6.00	8.00	10.00	11.20
	Denver	7.50	9.00	11.00	12.20
	Kansas City	8.00	10.00	12.00	17.20
Deming	El Paso	2.20	2.80	3.80	
	Pueblo	6.00	7.50	9.50	10.80
	Denver	7.50	9.00	11.00	12.20
	Kansas City	8.00	9.50	11.50	15.00
Florida and Lake Valley	El Paso	2.20	2.80	3.60	
	Pueblo	6.50	9.00	11.00	12.20
	Denver	7.50	9.00	11.00	12.20
	Kansas City	8.00	9.50	11.50	15.00
Nott	El Paso	2.20	2.10	3.40	
	Pueblo	6.00	7.00	9.00	10.80
	Denver	7.50	8.00	10.50	11.60
	Kansas City	8.00	9.00	11.00	12.60
El Paso	El Paso	6.00	7.50	9.50	11.60
	Pueblo	7.50	9.00	11.00	12.20
	Denver	8.00	9.50	11.50	15.00
Rincon	El Paso	1.50	2.00	3.00	
	Pueblo	6.00	7.50	9.50	10.80
	Denver	7.50	8.00	10.50	11.80
	Kansas City	7.50	9.00	11.00	15.00

ATLANTIC & PACIFIC RAILROAD

FROM	TO	Car Loads, in dollars and cents per ton of 2,000 lbs.			
		Ore Concentrates.	Lead Bullion, valuation not to exceed \$50 per ton.	Base Metal, Copper Matte, Bar and Black Copper, valuation not to exceed \$300 per ton.	Lead Bullion, valuation not to exceed \$50 per ton.
Engle, N. M.	El Paso	2.20	2.80	3.60	
Crocker, " "	Pueblo	5.50	7.00	9.00	10.20
	Denver	7.00	8.50	10.50	11.40
	Kansas City	7.50	9.00	11.00	14.20
Lava	El Paso	2.20	2.80	3.60	
	Pueblo	5.20	6.70	8.70	10.80
	Denver	6.70	8.20	10.20	11.80
	Kansas City	7.20	8.70	10.70	13.80
San Marcial, "	El Paso	2.40	3.00	4.50	
	Pueblo	5.20	6.70	8.70	10.80
	Denver	6.70	8.20	10.20	11.80
	Kansas City	7.20	8.70	10.70	13.80
Carthage, "	El Paso	2.60	3.20	4.70	
	Pueblo	5.20	6.70	8.70	10.80
	Denver	6.70	8.20	10.20	11.80
	Kansas City	7.20	8.70	10.70	13.80
San Antonia, "	El Paso	2.40	3.20	4.70	
	Pueblo	5.00	6.50	8.50	10.60
	Denver	6.50	8.00	10.00	11.60
	Kansas City	7.00	8.50	10.50	13.00
Magdalena, "	El Paso	2.80	3.60	5.10	
	Pueblo	5.00	6.50	8.50	10.60
	Denver	6.50	8.00	10.00	11.60
	Kansas City	7.00	8.50	10.50	13.00
Albuquerque, "	El Paso	3.00	4.00	5.60	
	Pueblo	4.50	6.00	7.00	8.40
	Denver	5.00	7.50	9.50	10.80
	Kansas City	5.50	8.00	10.00	12.00
Rernalillo, "	El Paso	3.20	4.20	5.70	
	Pueblo	4.20	5.70	7.70	8.80
	Denver	5.70	7.20	9.20	10.60
	Kansas City	6.20	7.70	9.70	12.00
Wallace, "	El Paso	3.40	4.40	6.00	
	Pueblo	4.20	5.70	7.70	8.80
	Denver	5.70	7.20	9.20	10.60
	Kansas City	6.20	7.70	9.70	12.00
Los Cerillos, "	El Paso	3.60	4.60	6.10	
	Pueblo	4.00	5.50	7.50	8.40
	Denver	5.50	7.00	9.00	10.40
	Kansas City	6.00	7.50	9.50	12.80
Flagstaff, A.T.	El Paso	6.50	8.00	10.00	
	Pueblo	7.50	9.00	12.50	14.00
	Denver	8.00	10.50	13.50	14.00
	Kansas City	9.50	11.00	13.50	14.00
Peach Spgs, "	El Paso	7.50	9.00	11.25	
	Poehlberry, "	8.00	9.50	13.75	18.20
	Kansas City	10.00	11.50	15.00	18.40
Kingman, "	El Paso	7.50	9.00	11.25	
	Pueblo	8.00	9.50	13.75	18.20
	Denver	9.50	11.00	15.00	18.40
	Kansas City	10.00	11.50	15.00	18.40
Yucca, "	El Paso	7.50	9.00	11.75	
	Pueblo	8.50	10.00	14.25	19.00
	Denver	10.00	11.50	15.00	22.00
	Kansas City	10.50	12.00	16.50	22.00
Needles, Cal.	El Paso	7.75	9.25	12.00	
	Pueblo	8.50	10.00	14.50	22.00
	Denver	10.00	11.50	16.00	22.00
	Kansas City	10.50	12.00	16.00	22.00
Fenner, "	El Paso	8.25	9.75	12.75	
	Pueblo	9.00	10.50	15.25	22.50
	Denver	10.50	12.00	16.00	22.50
	Kansas City	11.00	12.50	16.00	22.50
Daggett, "	El Paso	9.00	10.00	13.75	
	Pueblo	9.50	11.00	16.50	20.70
	Denver	11.00	12.50	17.00	20.70
	Kansas City	11.50	13.00	18.00	20.70
Bagdad, "	El Paso	9.00	10.00	13.75	
	Pueblo	9.50	11.00	16.50	20.70
	Denver	11.00	12.50	17.00	20.70
	Kansas City	11.50	13.00	18.00	20.70
Kramer, "	El Paso	9.00	10.00	15.00	
	Pueblo	10.00	11.00	17.00	21.60
	Denver	11.00	12.50	17.00	21.60
	Kansas City	11.50	13.00	18.00	21.60
Mojave, "	El Paso	10.00	11.50	16.50	
	Pueblo	11.00	12.50	16.50	22.60
	Denver	12.00	13.50	18.00	22.60
	Kansas City	12.50	14.00	18.75	22.60
Gila Bend, "	El Paso	10.00	11.50	16.50	
	Pueblo	11.00	12.50	16.50	22.60
	Denver	12.00	13.50	18.00	22.60
	Kansas City	12.50	14.00	18.75	22.60
Aztec, "	El Paso	10.00	11.50	16.50	
	Pueblo	11.00	12.50	16.50	22.60
	Denver	12.00	13.50	18.00	22.60
	Kansas City	12.50	14.00	18.75	22.60
Gila City, "	El Paso	7.50	8.50	11.50	
	Pueblo	8.00	9.00	11.50	16.60
	Denver	9.00	10.00	12.00	16.60
	Kansas City	9.50	10.50	12.00	16.60
Yuma, "	El Paso	7.20	8.00	10.80	
	Pueblo	7.50	8.00	10.80	11.25
	Denver	8.00	9.00	11.00	11.25
	Kansas City	8.50	9.00	11.00	11.25
Newhall, Cal.,	El Paso	6.00			

THE PUEBLO Smelting and Refining Company, PUEBLO, COLORADO.

BUYERS OF

Gold, Silver, Lead and Copper Ores,
Copper Matte and Bullion.

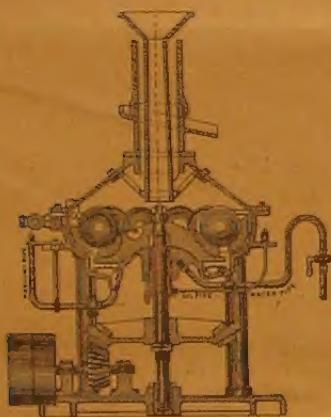
Refiners of Gold, Silver, Lead and Copper.

Manufacturers of Bar and Pig Lead, Lead Pipe, Antimonial Lead, Copper Ingots,
Granulated Test Leads and Litharge.

Pays Highest Prices for all classes of Ores.

Especial Attention to Sampling by most Approved Processes.

Quick Returns on all Consignments.



THE IMPROVED Crawford Mill

Is especially adapted for the arid sections of the Southwest where wood and water are scarce and transportation high. No mechanical knowledge necessary to either set up or run this mill; requires only one-third the water and three-fourths the power of stamps. Costs less, is operated cheaper, and will recover 20 per cent. to 40 per cent. more value. Our Grinding process liberates the gold and saves an average of 85 per cent. Inexpensive foundation. No plates or screens. Capacity, ten tons. Full particulars.

MECHANICAL GOLD EXTRACTOR COMPANY,

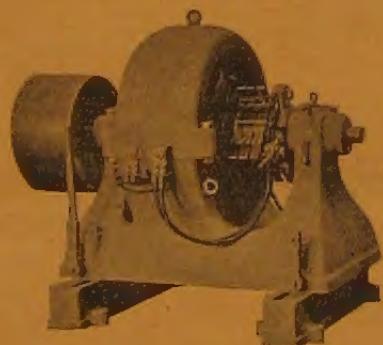
47 Broadway,

NEW YORK CITY

Electric Mining Hoists

ELECTRIC DRILLS,
ELECTRIC POWER PUMPS,
DYNAMOS, MOTORS, TELEPHONES,
ELECTRIC SIGNALS,
STEAM ENGINES, PUMPS,
BOILERS AND HEATERS,
WATER WHEELS AND
PIPE LINES.

We make a specialty of furnishing all kinds of electrical Machinery for mining purposes.



WYBRO & LAWRENCE,
POTOMAC BLOCK, Los Angeles, Cal.

RUMSEY & SIKEMEIER CO. Manufacturers and Jobbers of WIRe ROPE

Wrought Iron Pipe and Fittings, Belting, Hose and
Packing, Shafting Pulleys and Hangers.

MINE AND MILL SUPPLIES

Engines, Boilers and Steam Pumps, Hoisting and Conveying Ma-chinery, Ore Cars and Skips, Ore and Water Buckets.

ST. LOUIS,

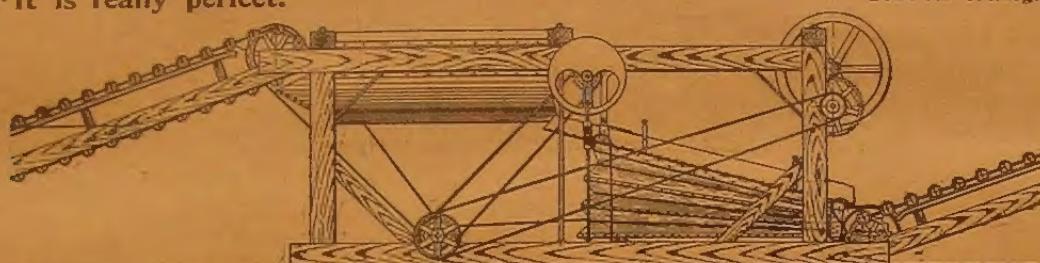
Missouri



WOOD'S DRY PLACER MINER

"It is really perfect."

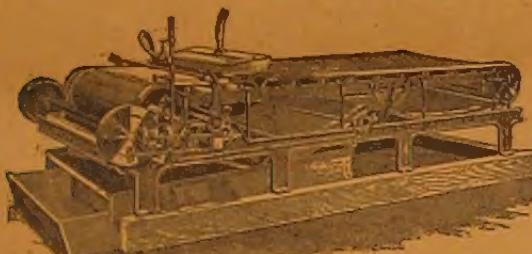
Send for Catalogue.



Built solely by FRASER & CHALMERS, Chicago, Ill., U. S. A.

Manufacturers of STAMPS, SMELTERS, PUMPS, HOISTS, RIVETED PIPE AND EVERY DESCRIPTION OF MINING MACHINERY

JOSHUA HENDY MACHINE WORKS



Hendy Improved Triumph Concentrator

Nos. 38 to 44 Fremont St., San Francisco

DEALERS IN AND MANUFACTURERS OF
All the Latest Improved

Mining, Sawmilling, Pumping, Smelting and
Electrical Machinery, Engines and Boilers,
and Mining Supplies of all kinds.

Manufacturers of the IMPROVED BRIGGS TWO-STAMP BATTERY.

BAKER IRON WORKS

LOS ANGELES, CALIFORNIA

Mining and Milling Machinery, Atlas Engines and Boilers, Worthington Steam Pumps

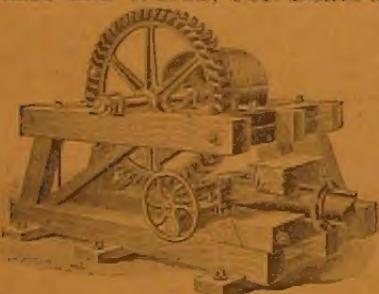
Water Works Machinery
A SPECIALTY

RISDON IRON WORKS

Office and Works, Cor. Beale and Howard Sts., San Francisco

— MANUFACTURERS OF —

Cable Address, "Risdon's," San Francisco



The above cut shows the general arrangement of Knight's Standard Water Wheels, of which there are more than 450 in use in California alone. These wheels are made from 3 feet to 6 feet in diameter, from 10 to 1000 horse power, and adapted to all heads and purposes. Descriptive circulars mailed free on application.

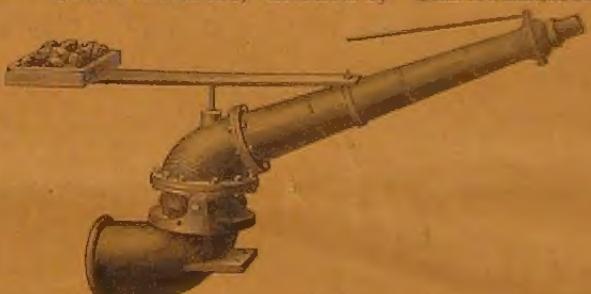
Johnston Concentrators,
Improved Bryan Mills,

Risdon Ore Feeders, 'Challenge' Type
Air Compressors

Mining, Milling, Pumping and
Hoisting Plants,

GOLD AND SILVER STAMP MILLS.

Catalogues and Prices on Application.



IMPROVED HYDRAULIC GIANT

The above cut illustrates the improved form of Hydraulic Giants, in which the Center Bolt is dispensed with, which was liable to catch trash. Prices and catalogues of our specialties sent free on application.

PARKE & LACY COMPANY

21 and 23 Fremont Street, San Francisco, Cal.

MINING MACHINERY AND SUPPLIES, ENGINES AND BOILERS

ROPP STRAIGHT LINE FURNACE
FOR ROASTING, CHLORINATING, AND DESULPHURIZING ORES.

Knowles Steam Pumps Lidgerwood Hoisting Engines
Dodge Rock Breakers and Pulverizers
Ingersoll-Sergeant Rock Drills and Air Compressors
Wood Working, Iron Working and Saw Mill Machinery.